WHAT BARBARO TAUGHT US - LIVING THE ZUNI WAY

Smithsonian

{ APRIL 2007 }

Wonders of Alexandria

REDISCOVERING THE FABLED CITY OF CLEOPATRA

William Zinsser on Getting Painted

Learning to Love Africa's Wild Dogs

A Magical Garden of Glass

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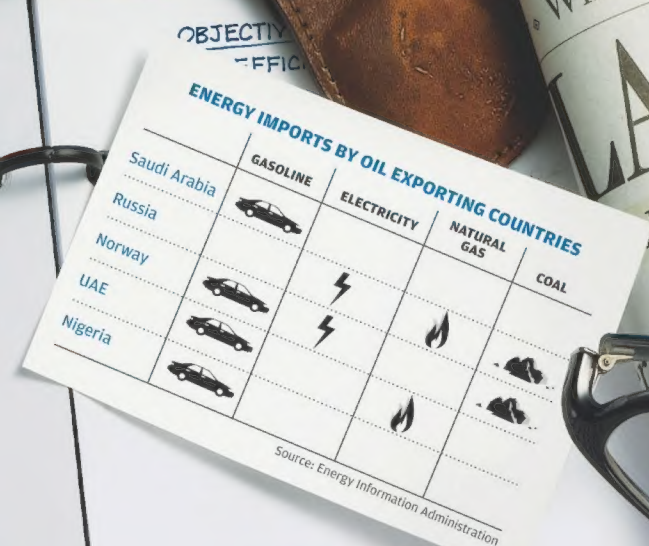

The fact is, the vast majority of countries rely on the few energy-producing nations that won the geological lottery, blessing them with abundant hydrocarbons. And yet, even regions with plenty of raw resources import some form of energy. Saudi Arabia, for example, the world's largest oil exporter, imports refined petroleum products like gasoline.

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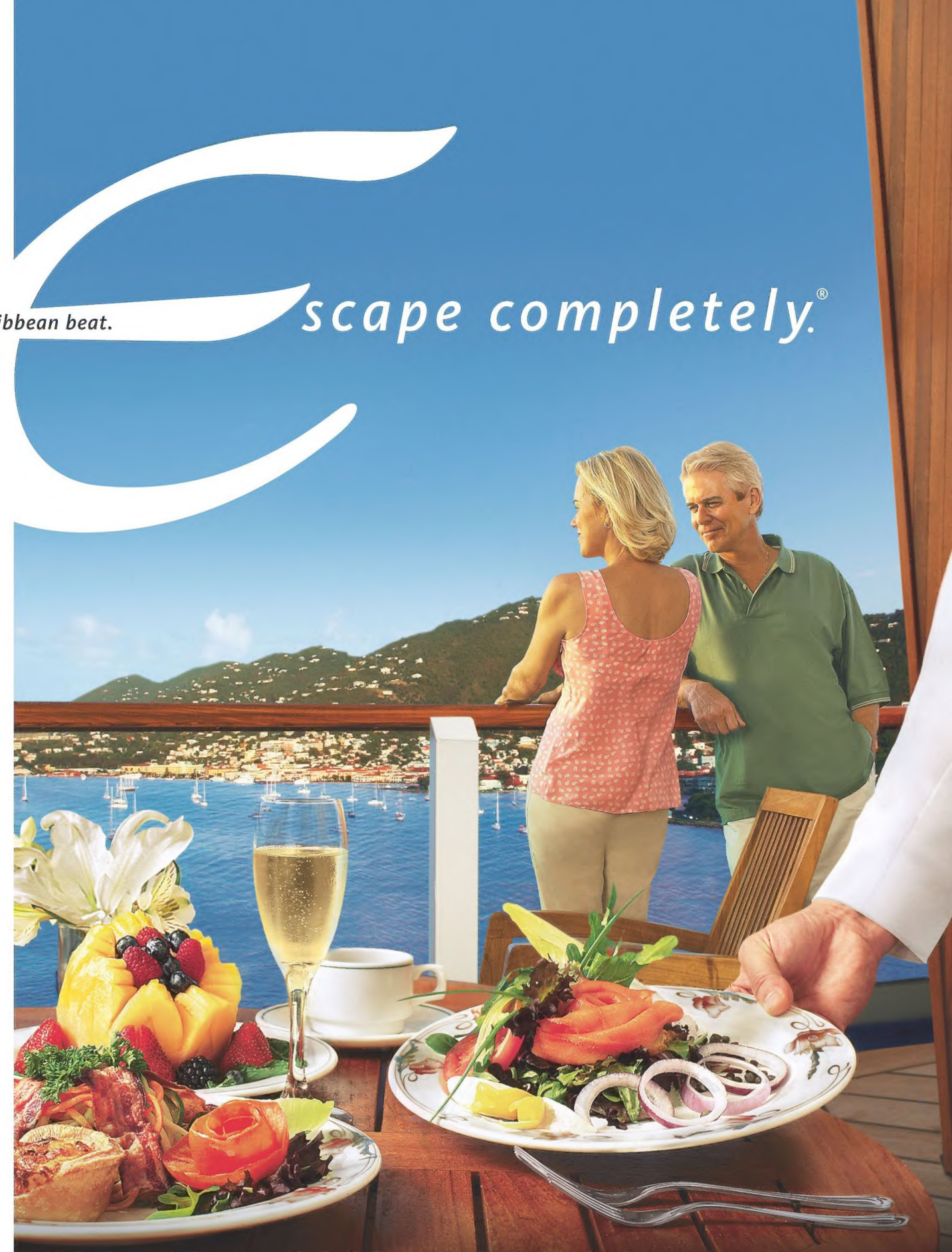

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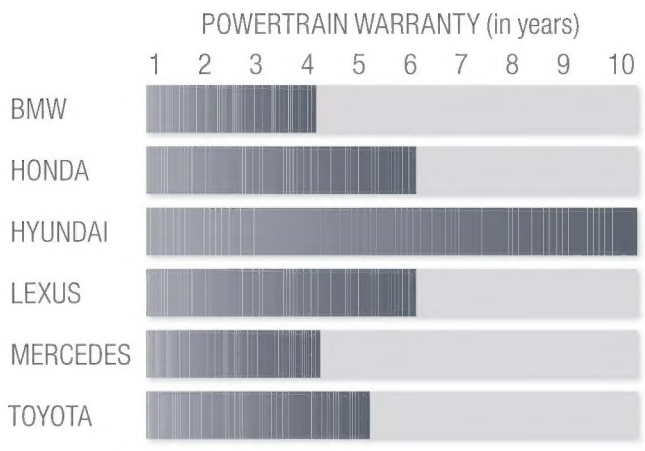

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PUERTO RICO

Smithsonian features

{ APRIL 2007 · VOLUME 38, NUMBER 1 }

Chihuly "has personally pushed glass blowing farther than anyone ever imagined it could be pushed."

"THE NATURE OF GLASS," PAGE 84

THIS PAGE: Chihuly titled these buoyant glass pieces *Walla Wallas*, after the variety of sweet onions they resemble. They vary in size from 12 inches to 18 inches in diameter. Photograph by Lynne Sladky / AP. **COVER:** Plans are in the works to build an underwater museum in Alexandria's harbor to allow visitors to see the many antiquities submerged there (a black-granite statue of an Isis priest). Photograph by Christoph Gerigk / Franck Goddio / Hilti Foundation.

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Beneath Egypt's modern metropolis, archaeologists are discovering astonishing remnants of the fabled ancient city, including possible traces of the palace of Cleopatra herself
BY ANDREW LAWLER / PHOTOGRAPHS BY STÉPHANE COMPOINT

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Victims of indiscriminate killing, Africa's oft-maligned and much-misunderstood wild dogs may be the continent's most endangered carnivore. Can a conservation effort save them?
BY PAUL RAFFAELE

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Thanks to a couple of expatriate Americans, the gaudy *Proceedings of the Old Bailey*—a portal into daily life in 18th-century London—is remarkably accessible on-line
BY GUY GUGLIOTTA

76 The Zuni Way
With 90 percent of its members still living in their ancestral homeland in northwestern New Mexico, the Native American tribe is among the continent's most cohesive. But why?
BY VIRGINIA MORELL / PHOTOGRAPHS BY SCOTT S. WARREN

84 The Nature of Glass
Sculptor Dale Chihuly's delightful floats, reeds, lilies and towers are making a splash at the Fairchild Tropical Botanic Garden, in Coral Gables, Florida

88 Barbaro's Legacy
In their successful effort to repair the broken leg of the winner of the 2006 Kentucky Derby, veterinarians showed how far equine medicine has come—and how far it has to go
BY STEVE TWOMEY

Digital photog
just got a big hel

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"Everyone at Zuni has a role. No one, no matter what, is left behind. That is—and always has been—the Zuni way."

"THE ZUNI WAY," PAGE 76

THIS PAGE: Many Zunis at the pueblo (a grandmother and child, bedecked in traditional necklaces, at the Zuni Tribal Fair) earn some income from making crafts, such as kachina dolls, carved fetishes and turquoise-and-silver jewelry. Photograph by Scott S. Warren.

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THE DECIDING MOMENT
A newly published scrapbook of Henri Cartier-Bresson's early photographs is changing some notions about how he worked **BY SARAH BOXER**

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LOST CITY OF POWHATAN
After nearly 400 years, the Algonquian settlement key to the survival of Jamestown has been found
BY ANDREW LAWLER

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Conspiracy buffs tour the lavish Washington, D.C, temple of the Freemasons, one of the world's most mysterious fraternities **BY DAVID A. TAYLOR**

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GOOD FOR THE GOOSE

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FROM THE EDITOR

Winners

In praise of a city's storied past and a Thoroughbred's spirit **BY CAREY WINFREY**

AS A YOUNG MAN, says Andrew Lawler, he came under the spell of Lawrence Durrell's *Alexandria Quartet* and "his mesmerizing vision of a diverse, polyglot, exciting Mediterranean city with a rich past that is almost invisible. Unlike Rome, it's not a place where you go and see monuments; you have to use your imagination." Lawler, who wrote our cover story, "Raising Alexandria," page 48, says the city of his and Durrell's imaginings turned out to be even more than he had expected. "It felt inhabited by so many layers, so many ghosts from so many eras, and yet was also a thoroughly modern Egyptian city. So it was an unusual combination of past, present and future."

The area around Pompey's Pillar, a 98-foot-high granite monument dating to A.D. 291, is one of the few places where ancient Alexandria is still accessible, particularly its magnificent catacombs. "You go down this spiral stair, down and down, and there are these enormous caverns where early Christians buried their dead," Lawler says. "It gives such a feel for what is literally under the surface in Alexandria. Up above, you have an overcrowded, somewhat decaying old port city that at the same time is becoming more prosperous. But underneath the surface, there's an amazing history that has not gotten that much attention, in contrast to Rome or Athens. Alexandria ranks among the most important cities of the ancient world, and yet its past has been largely ignored."

Andrew Lawler (in Sudan): Alexandria was "more evocative of the ancient world than anywhere else."

BY HIS OWN ADMISSION, Steve Twomey is not a horse person. "I have ridden," he says, "but I don't own a horse, don't go to the track. This story ["Barbaro's Legacy," p. 88] was an education for me." Twomey was still reporting the piece when, sadly, the 2006 Kentucky Derby winner had to be euthanized in January.

What did he learn? "I learned how proud the veterinary profession is and what a close-knit fraternity they are. I also had heard, over and over again, 'Well, Barbaro is special. You look into his eyes, and you just know he's special.' And I thought, yeah, sure. But when the Jacksons [Barbaro's owners] took me over to the stable, I suddenly realized what people were talking about. He looked so bright, so intelligent, so tough, and he would have this look, like, 'Stay cool. I'm under control.' I was really struck that this mythical image of a horse with personality turned out to be true."

COURTESY OF ANDREW LAWLER

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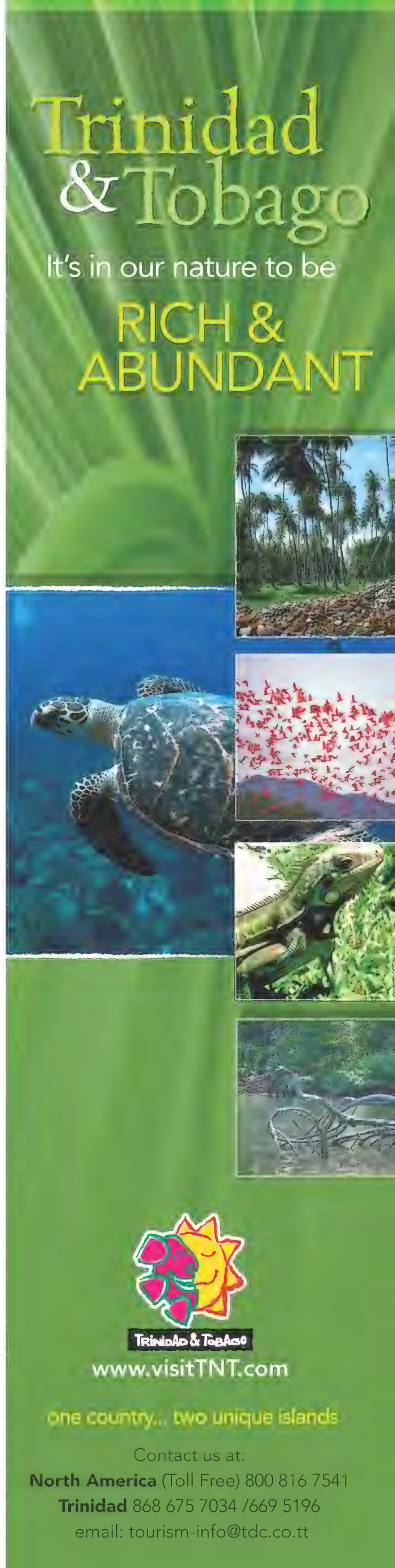

LETTERS READERS RESPOND TO THE **FEBRUARY** ISSUE

Regarding "The Pardon," it was almost amusing to listen to some of those who were the most vocal in their criticism of President Ford back in 1974 recently scramble to declare that he had done the right thing to unite America by pardoning Richard Nixon.

GERALD HULSLANDER, MARSEILLES, ILLINOIS

SCAR STORY

CAROLINE ALEXANDER'S "Faces of War" mentions the pioneering facial reconstruction surgery of Sir Harold Gillies in World War I. Gillies continued the good work during World War II as chief facial surgeon for the British Army. My brother, George, was severely wounded in an artillery barrage while serving with the Canadian Overseas Army in Normandy. Among his many wounds, shrapnel had sliced him from his right nostril to his right ear. When he was brought into the field aid station, Gillies happened to be there. Using a magnifying glass, he made 42 tiny stitches to close the wound. The scar was virtually invisible, though on bitterly cold days it would appear as a livid red line. For a time, George taught at a school in one of the toughest sections of Montreal, but after walking to school in frigid weather that made his scar stand out, he had no problem disciplining the school's ruffians.

K. STEWART SHEARMAN
VANCOUVER, CANADA

PRIZE FIND

IN MY LATE FATHER'S pipe collection there is a charm (inset) that appears identical to that shown in "Sea Island Strata," page 23. The design, of a man with a feathered headdress, is typical of representations of Native Americans in everything from fine art to tobacco ads since the Colonial era. The molding flaw, an offset most visible at the lips, is even the same. The only differences are that the charm in my collection is less stressed, the red paint is mostly intact and its link ring is miss-

ing. I once asked my father, who was born in 1904, where he got the charm. He said he'd had it since he was a boy and that it was a prize of some kind, perhaps from a Cracker Jack box or a circus. With all due respect to Dan Elliott's archaeological credentials, I submit that the pipe he found on Ossabaw Island, in Georgia, is not a "slave-era artifact" illustrating a biblical king who maybe was "a symbol of the [oppressive] plantation system."

LEMUEL S. BLADES III
ELIZABETH CITY, NORTH CAROLINA

Other letters have also questioned the provenance of the pewter pipe charm described in our article. It's "identical to the one I have in my jewelry box," writes Debra Cohig of Denver, Colorado. Dan Elliott, the research archaeologist, says he has revisited the question and now believes that the charm is not a slave-era artifact after all but a trinket that was manufactured "more likely" after 1893. He adds that it indeed could be "an early Cracker Jack prize." He attributes the misidentification to his having discovered the artifact next to items that had been authoritatively dated to the slave era. Elliott says he regrets the error: "Archaeologists are storytellers, and sometimes we get our stories wrong." —Ed.

KID WORLD

I WAS ONE OF THOSE South of Grand(ers) who grew up in Des Moines around the same time as author Bill Bryson ("Boys' Life"). Last June, I traveled back to Des Moines and drove around the old neighborhood. Lo and behold, there were kids everywhere. I stopped to talk to some of the parents and learned that a Fourth of July parade that my brother, Jim, had started in the 1960s—we decorated the bikes and trikes, put the babies in wagons and marched down a dead-end street—continues on today. After being invited back to be the parade's grand marshall, I was content that utopia still exists. Children still grow up in "Kid World" in Des Moines.

MARION CORCORAN ROMIG
ROCHESTER, NEW YORK

RECURRING BEAUTY

I WAS STRUCK by the contemporary look of the beautiful Pre-Raphaelite women ("Incurably Romantic"). With their long-limbed, slender bodies, tumbling hair and dewy mouths, they bring to mind the models and actresses of today. The exploitation some of them suffered seems uncannily repeated in our society as well.

DULCIANNE VYE
WISCASSET, MAINE

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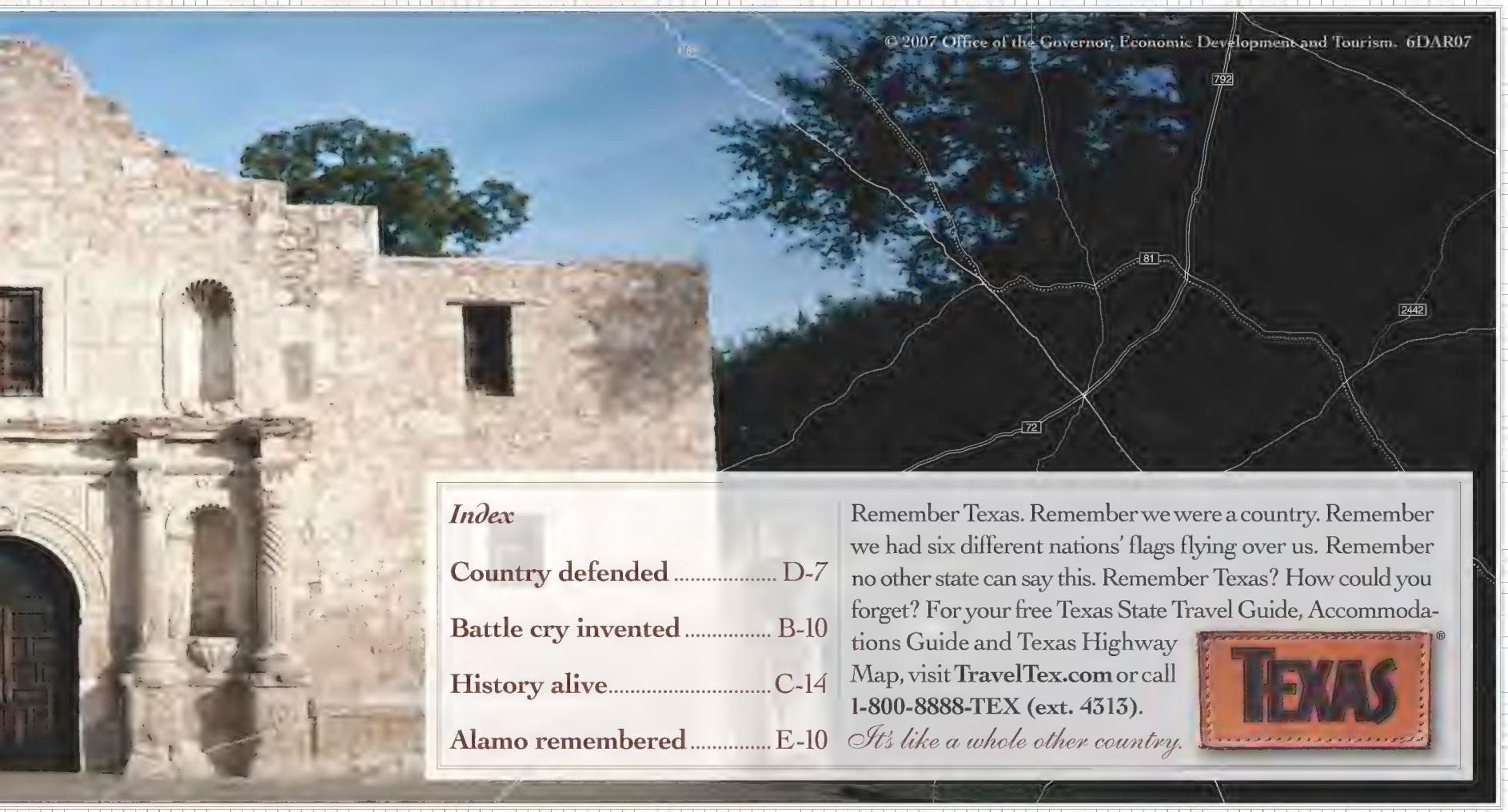

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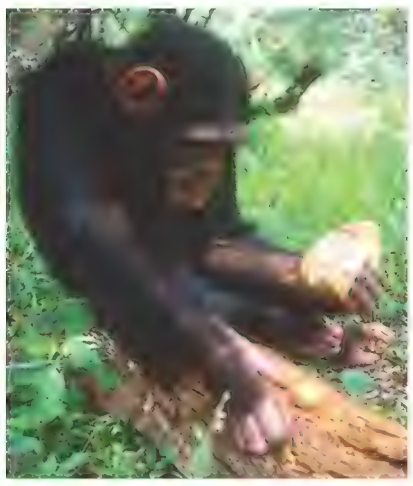


OLD HANDS

Chimpanzees used stone tools at least 4,300 years ago, back in the human Stone Age, according to a study of the first known prehistoric ape site, in Côte d'Ivoire. A University of Calgary-led group found ancient rocks that were very similar to rocks that today's chimps use to smash nuts. Some of the old tools even bear traces of the same nuts that modern chimps eat. No word from the researchers on how much longer the chimp Stone Age is likely to last.

THAT LOUD NOISE? JUST THE EARTH VENTING

Far below the ocean surface, hydrothermal vents—cracks in the earth's crust that spew superheated, mineral-rich water—provide energy and shelter for weird worms, crustaceans and other creatures that live in complete darkness. University of Washington scientists placed recording devices more than 7,000 feet deep in a vent field 300 miles west of Seattle and made a startling discovery: these black smokers are loud, rumbling like avalanches. Moreover, each vent they tested had a signature sound, potentially providing deep-sea creatures with a sonic road map in the dark.

NAME: *Rhabdophis tigrinus*, an Asian snake

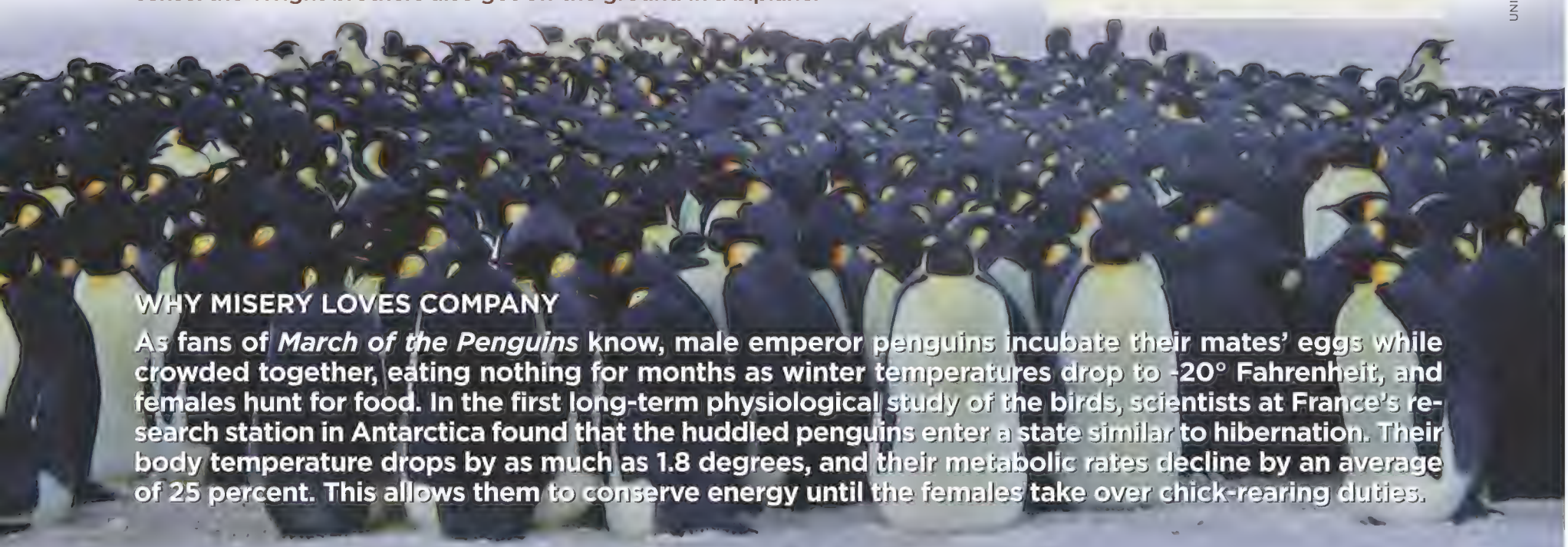
EXISTENTIAL QUESTION: If a snake can't make venom, can it be venomous?

PRACTICAL ANSWER: Yes. *R. tigrinus* can steal venom, say herpetologists from Old Dominion University who recently showed how the species does it. When the snake eats a toxic toad, it sequesters the toxin in bulging glands in the back of its neck. When it fears attack, the snake bows its head, effectively daring its foe to bite into the poison-filled glands.

THAT'S A MEAN SNAKE. But not always. The researchers found that if a snake eats a toad-free diet, it doesn't have any venom—and is more likely to flee than fight.

FORE FLIGHT

It was in 2001 that scientists in China discovered the fossil of a 2.5-foot-long flying dinosaur that lived about 125 million years ago. *Microraptor gui* had four wings, with feathered hind limbs as well as forelimbs. Texas Tech researchers, having developed computer models of the animal's flight, now suggest that it held the hind wings below the front ones. That the arrangement was an early stage in the evolution of flight makes sense: the Wright brothers also got off the ground in a biplane.



WHY MISERY LOVES COMPANY

As fans of *March of the Penguins* know, male emperor penguins incubate their mates' eggs while crowded together, eating nothing for months as winter temperatures drop to -20° Fahrenheit, and females hunt for food. In the first long-term physiological study of the birds, scientists at France's research station in Antarctica found that the huddled penguins enter a state similar to hibernation. Their body temperature drops by as much as 1.8 degrees, and their metabolic rates decline by an average of 25 percent. This allows them to conserve energy until the females take over chick-rearing duties.

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The Deciding Moment

How did Henri Cartier-Bresson do it? The master photographer's newly reconstructed scrapbook offers a fresh look **BY SARAH BOXER**

"**WATCH OUT FOR LABELS**," Robert Capa once told his friend and fellow photographer Henri Cartier-Bresson (1908-2004). "They're going to stick you with one you won't get rid of: that of a little Surrealist photographer. You're going to be lost, you'll become precious and mannered."

That was in 1947, the year that Capa, Cartier-Bresson and some other photojournalists founded the photo agency Magnum. Capa was half right. Cartier-Bresson did get stuck with a label: not "little Surrealist photographer" but "photographer of the decisive moment." Since 1952 and the publication of his book of photographs *The Decisive Moment*, his name has conjured up unerring vision and hair-trigger timing.

If you want to see Cartier-Bresson when he was still indecisive—about what to print, what to show and what to save—look at the scrapbook he put together in 1946, now reconstructed and published as *Henri Cartier-Bresson: Scrapbook, Photographs 1932-1946*. It contains multiple versions of many of his iconic photographs. And there's a great story behind it.

In 1940, the Germans took French Army corporal Henri Cartier-Bresson prisoner. By 1942, he was presumed dead, and the Museum of Modern Art was planning a memorial retrospective. He was already famous, having taken many of the shots he's still known

Valencia, Spain, 1933: The image Cartier-Bresson chose for The Decisive Moment was one of several taken at the same spot.

HENRI CARTIER-BRESSON / MAGNUM PHOTOS

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But Cartier-Bresson was not dead. He escaped in 1943 and dug up the camera he had buried in the mountains.

for today: puddle jumper at railway station, prostitutes filing their nails, cyclist blurring by a spiral stair.

But Cartier-Bresson was not dead. He escaped in 1943, dug up the Leica camera he had buried in the Vosges Mountains, and was soon working as a photographer and filmmaker in France. In 1945 he got in touch with MOMA curators Beaumont and Nancy Newhall to help out with the "memorial" show.

He printed 346 of his photographs, all roughly index-card size; pasted them onto sheets of paper, eight or so to a page; and put them in a scrapbook for the Newhalls to select from. He included not only the old photos that the curators knew but also new ones.

"The Photographs of Henri Cartier-Bresson," the MOMA show, opened with 163 prints in February 1947, and the scrapbook was packed away. It ended up on a shelf until one day in the late 1980s, when Martine Franck, Cartier-Bresson's wife, found him "ripping out the photos" to preserve them. She stopped him, but only a few pages were left.

From the reconstructed book, it's clear that Cartier-Bresson didn't just point and decisively shoot. He found promising settings, lay in wait and took many shots, both vertical and horizontal.

So did his decisiveness lie in his famously ruthless selection of a single shot from each campaign? "When the war came," he once said, "I went through my negatives and destroyed almost everything, except what's left in *The Decisive Moment*." He did it, he said, "the way you cut your fingernails."

Apparently, though, it was not that simple. The scrapbook reveals a stage between his shooting and printing of multiple images of the same subjects (1931-46) and his choosing one of each subject for *The Decisive Moment*. It might be called *The I-can't-quite-decide-which-image-looks-more-decisive Moment*.

What lay behind all this obsessive selecting?

Consider the 1933 picture, taken in Valencia, Spain, of swinging doors at what seems to be a sports arena. If you compare the two images that Cartier-Bresson put in his scrapbook, presumably his favorites, with the five he rejected (included in the new volume but unavailable for magazine publication), you will see that he picked the two hardest to grasp. Both of his favorites show a bodyless head wearing cap and spectacles, half-blinded by light, floating just to the right of a fragment of the number 7. In the background, a tiny, blurry figure appears to be leaving the scene. Though the two figures are next to each other in the frame, they share neither scale nor story.

Now, the outtakes: they are as symmetrical as a dollar bill, and they make both dramatic and spatial sense. Smack in the middle of the frame is the wooden door of the arena, with the number 7 painted on it. As people come and go through the door, the 7 on the door splits, like a camera's shutter. On either side of this door, spectators peer out from rectangular windows. On the right there's the capped bespectacled head, and on the left, a slack-jawed boy following the event—maybe a bullfight.

There is more than a little irony here. In 1946, the year before helping to found Magnum—a photojournalism agency—Cartier-Bresson was rejecting the documentary shot in favor of the confounding image. He preferred the Valencia photographs from which all helpful context had been stripped, leaving only a puzzle about blindness and sight. En route to the title "photographer of the decisive moment," he was actually chasing the very label that Capa would warn him against: "little Surrealist." Ah, well.

The photographer (above, as a German prisoner in 1942) included this version of the Valencia photograph in his scrapbook—but later it, too, became another outtake.

SARAH BOXER *is the author of* In the Floyd Archives: A Psycho-Bestiary.

FONDATION HENRI CARTIER-BRESSON; HENRI CARTIER-BRESSON / MAGNUM PHOTOS

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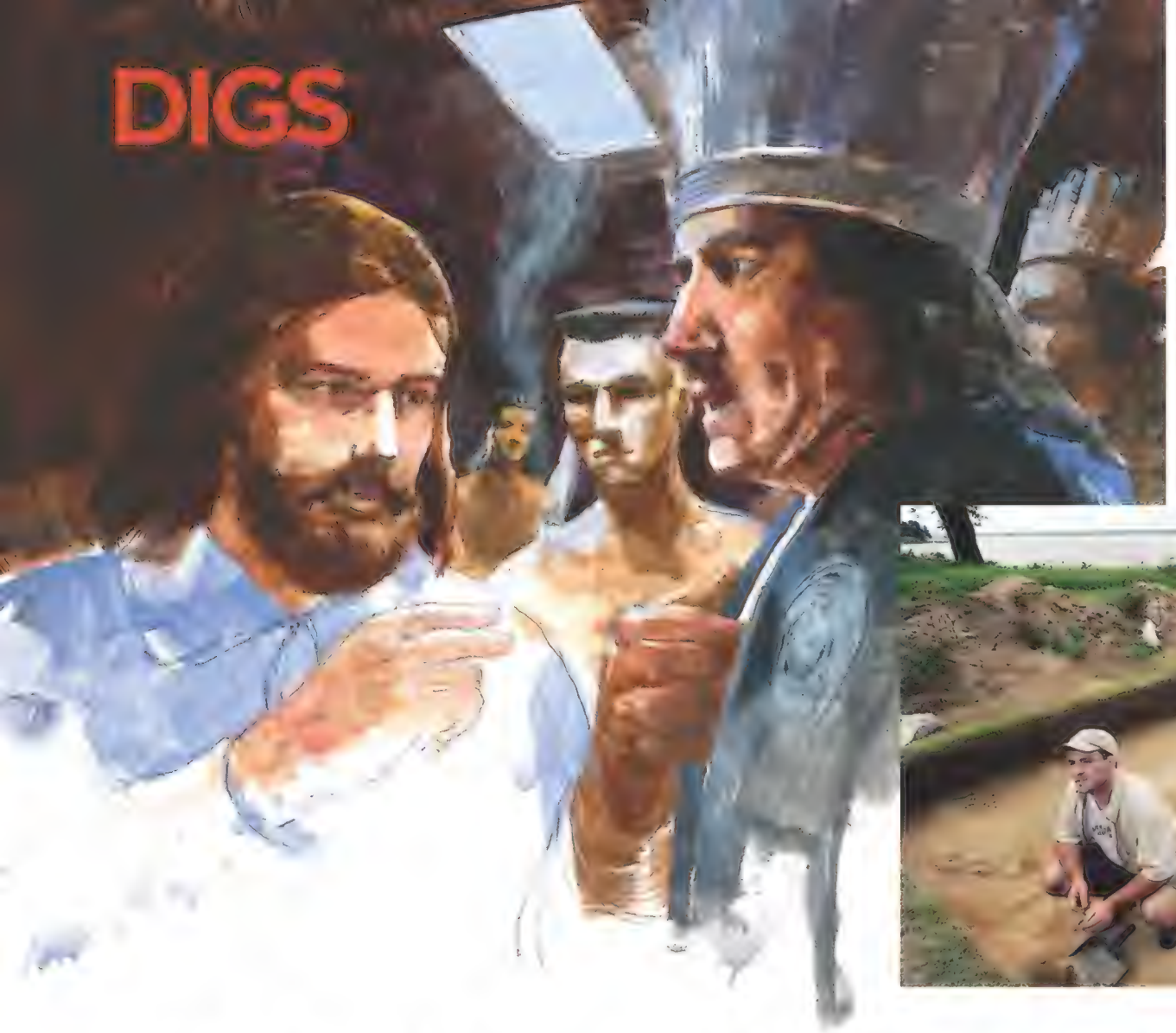

Capt. John Smith and Chief Powhatan had historic encounters in Werowocomoco (below, Dave Brown, foreground, and a colleague excavating part of the Indian settlement).

Lost City of Powhatan

The Algonquian settlement crucial to the survival of Jamestown 400 years ago has been found. Finally

BY ANDREW LAWLER

TRUDGING THROUGH SWAMP MUD on a cold February day in 1608, Capt. John Smith and a small band of armed men approached a rickety wooden bridge. On the other side of a sluggish creek was the capital of the powerful Algonquian chief Powhatan, who ruled a vast territory across the Virginia tidewater. Smith, a canny mercenary who once did time as a Turkish slave, had reason to be wary. The first time he had seen Powhatan's capital, two months before, he had been a captive. Only the intervention of Powhatan's young daughter Pocahontas, as the English explorer would dramatize the scene years later, had saved him from execution.

This time, Smith was an invited guest at the Algonquian settlement, Werowocomoco. He was escorted by Powhatan's son into the chief's longhouse, built of saplings, reeds and bark and set apart from the village. He promised to help subjugate Powhatan's enemies to the west, and Powhatan formally declared the pale-faced foreigner a *weroance*, or Algonquian chief.

The survival of Jamestown—established 400 years ago next month—hinged on this encounter at Werowocomoco. The English had unknowingly built their small rude settlement just a dozen miles from the center of Powhatan's confederacy. In the midst of their first long winter, with insufficient food supplies, the foreigners were depending on exchanging copper ware, glass beads and iron hatchets for Algonquian corn. But the peace did not hold, and within a year Powhatan relocated his capital farther west. Werowocomoco was abandoned, and the location of the dramatic confrontations between Smith and Powhatan that ensured the English foothold in North America was lost to history.

Until Lynn Ripley got a dog.

Walking her Chesapeake Bay retriever on her York River property a decade ago, Ripley noticed potsherds sticking up from the clay. "They seemed to jump out at me," she recalls in her garage turned laboratory as she opens a large safe and pulls out drawer after drawer of broken pottery, arrowheads and pipestems.

STAN FELLOWS; BRUCE PARKER / RICHMOND TIMES DISPATCH / AP PHOTO

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In 2001, two archaeologists who had visited Ripley told Randolph Turner at the Virginia Department of Historic Resources about her collection. Turner, also an archaeologist, has spent three decades trying to find Werowocomoco, poring over John Smith's writings, examining a map of the site made by a Spanish spy in the English court and driving the back roads of Gloucester County looking for clues to its location. Even before hearing of Ripley's finds, Turner's search had led him to her long driveway, but he had never found anyone home.

When he saw her artifacts, he was convinced they came from the place where Powhatan ruled. For one thing, Smith had described Werowocomoco as situated on a shallow bay along the York River and bounded by three creeks within a mile of each other. "Everything fits—there's no [other] place where it all comes together," Turner says as we stand on the Ripleys' pier surveying the creeks and river. "This is Werowocomoco."

With the blessing of Lynn Ripley and her husband, Bob, Turner and other archaeologists set out in 2003 to uncover Powhatan's town. They examined 20 small copper pieces, a cache larger than any ever found at a Native site in Virginia. The chemical signature of the copper matched that traded by Jamestown settlers between 1607 and 1609. Other metal items and glass beads found at the site also dated to the Jamestown era, as did at least one building.

But most surprising were the faint remains of two great parallel ditches, each longer than two football fields. On the 1608 map made by Don Pedro de Zuñiga—the Spanish ambassador to England and a spy for King Philip III—is an odd double "D" shape at the site marked as Werowocomoco. The marking had been dismissed by many scholars as a misprint, but the archaeologists argue that it described the ditches, with the long stretches visible today forming the straight edges of the "Ds," which then curved in an arc following nearby creeks. The ditches may have set off religious or ritual spaces from day-to-day activity. Radiocarbon analysis revealed that they were created in the 13th century—predating Jamestown by some 400 years.

Since historians long assumed that Powhatan founded Werowocomoco, the age of the ditches astonished archaeologists—and changed their understanding of Algonquian culture. They now believe that Powhatan, who came from a village to the west, placed his capital at what was already an ancient settlement.

Walking with me to the river's edge, Martin Gallivan, an archaeologist at nearby William and Mary College, points out the spots—now green with new grass—where excavations first revealed an occupation centuries before Powhatan. "This was a big village," he says, encompassing 45 acres. He estimates that hundreds of people may have lived here, working the fields and orchards that the digs show existed just inland.

On his 1608 visit, Smith and his men walked through the village and the fields, and then into the chief's impressive residence. We know this because the explorer, with his eye for detail even in a moment of extreme tension, noted in his journal that the distance from the shore to Powhatan's longhouse was "some thirtie score." Accounting for erosion of the shoreline, Gallivan walked off about 1,500 feet—and found himself standing just inside the sacred area.

David Brown, a William and Mary graduate student working with Gallivan, is trying to make sense of a jigsaw puzzle of building post molds found in a large trench dug by the archaeologists. One of them has been radiocarbon dated to 1600. "We may have a structure here that is roughly 15 feet by 45 feet," he says. Its large size, its location within the ditches and the shards of fine pottery and a fragment of copper found here hint that the building was part of Powhatan's royal compound, though neither Brown nor Gallivan will go so far as to say this is the place where Smith met Powhatan and Pocahontas.

The Algonquian settlement had disappeared until Lynn Ripley began to find traces of it on her property.

Smith and Powhatan parted friends after their winter meeting in 1608, but soon the two peoples would be locked in a spiral of violence that doomed Werowocomoco and ultimately Powhatan's entire empire. Though he lived until 1618, the chief's power would decline steadily. Oddly, the abandoned but fertile fields and orchards around the village do not seem to have immediately drawn English settlers. Perhaps a few Algonquians continued to live there or returned to bury their dead. "Or it may be a case of bad juju," Brown says, speculating that whites might have been reluctant to inhabit an area once occupied by those they regarded as devil-worshiping savages.

Now, four centuries later, two of the archaeologists working at the site are Virginia Indians, several Native Americans have constructed a traditional house of saplings for education purposes, and a council of Virginia tribes keeps a close eye on the project to ensure proper treatment of any human remains. As Americans celebrate the 400th anniversary of the first permanent English settlement next month, it's a good time to remember that earlier Americans had built a nearby village twice as old.

ANDREW LAWLER *grew up just off Powhatan Avenue in Norfolk, a few dozen miles from Werowocomoco.*

JOHN H. SHEALLY II

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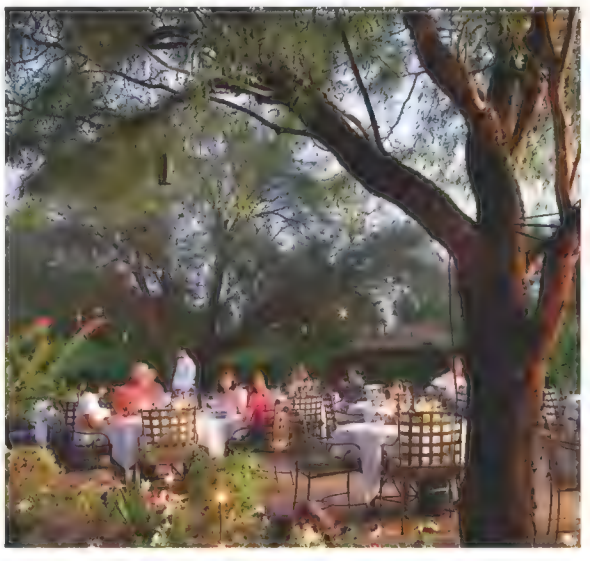

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INTERVIEW

ROY RICHARD GRINKER

ANTHROPOLOGIST, WASHINGTON, D.C.

His new book offers a scholar's—and father's—perspective on autism

BY ARTHUR ALLEN

YOUR TEENAGE DAUGHTER, ISABEL, HAS A FORM OF AUTISM. HOW HAS SHE AFFECTED YOUR RESEARCH? Seeing how much progress she's made makes me more eager to tell people that autism is not necessarily a devastating diagnosis, that people with autism can make tremendous progress and that experts are finding better ways to help both autistic people and their families. Anthropologists usually try not to influence the cultures they study, but I've felt compelled to share my own story.

HOW DO SOME OTHER CULTURES DEAL WITH AUTISM? In the Democratic Republic of the Congo, people on the autism spectrum are often recognized for having great skills. Either because they are seen as more in touch with the spirit world, or they're recognized for their skill at, say, knowing what every plant is for. Similarly, the Navajo view a person with autism more as someone who never became an adult than as someone disordered. They talk about autism as perpetual childhood. In Senegal some societies call autistics "marvelous children." Even in the United States, I've heard people talk about them being closer to God; they're honest, they seldom lie, they're more pure. I found that belief in India as well.

CONTRARY TO SOME MEDIA REPORTS AND THE ASSERTIONS OF MANY AUTISM SUPPORT GROUPS, YOU CONTEND IN YOUR NEW BOOK, *UNSTRANGE MINDS*, THAT THERE IS NO AUTISM EPIDEMIC IN THE UNITED STATES. Yes. Higher prevalence rates don't mean the disorder is more common. A host of factors has created what I call a perfect storm of the autism "epidemic." Greater awareness, less stigma, better methods of counting, changing definitions of what autism is and is not, and earlier detection, among other things, have led to higher prevalence rates. I see these rates as evidence that we're finally getting it right. And with higher numbers, parents have the ammunition to fight for more and better services for their children. The changes in autism awareness and diagnoses are not just the result of scientific advances but of cultural changes. You often find that culture changes science more than science changes culture.

DOES OUR ABILITY TO BETTER RECOGNIZE AUTISM SPECTRUM DISORDERS SAY SOMETHING ABOUT US? We are getting to a point where the word "diversity" doesn't just mean ethnic and racial differences but also different types of minds and abilities. The fact that we live in an age in which people can communicate through computers has also helped autistic people work and interact with others. Isabel is embraced by her community. And she would not have been not long ago.

YOU ALSO SAY VACCINES DON'T PLAY A ROLE IN AUTISM. The scientific literature has not shown any evidence that vaccines or anything in vaccines is related to autism or its prevalence. Autism is probably many different, highly variable disorders caused by multiple genes interacting in complicated ways. But many people like to think there is a single cause.

ARTHUR ALLEN *is the author of the just-published book* Vaccine: The Controversial Story of Medicine's Greatest Lifesaver.

CAMERON DAVIDSON

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The Masons' lavish Washington, D.C. temple has become a must-see landmark for the curious and conspiracy-minded **BY DAVID A. TAYLOR**

MAMMOTH SPHINXES guard the House of the Temple of the Scottish Rite, a formidable neo-Classical building in the heart of Washington, D.C. Inside, Egyptian hieroglyphics adorn a soaring atrium. The building's nine-foot-thick walls hold human remains.

Bronze coiling snakes flank a large wooden throne, canopied in purple velvet, in a second-floor inner sanctum called the Temple Room, where men from around the world gather behind closed doors every two years. Over the centuries the select membership has included signers of the Declaration of Independence; George Washington, Theodore Roosevelt, Gerald Ford and 13 other presidents; Senators Charles Schumer and Robert Dole; Chief Justice Earl Warren and other Supreme Court justices. Formally they are known as Freemasons, but most people know them simply as Masons. And this artfully forbidding edifice, a mile from the White House, is their southern headquarters.

Long viewed by outsiders as a mysterious society and one of the world's most powerful fraternities, Masons have recently become the object of even more curiosity as filmmakers and novelists mine Masonic legends and symbols for the stuff of conspiracy. In the 2004 thriller *National Treasure*, Nicolas Cage followed Masonic clues and invisible writing on the Declaration of Independence in search of a hidden cache of gold. Dan Brown, author of *The Da Vinci Code*, has said his next novel would involve Masonic architecture in Washington, D.C. His Web site challenges read-

Conspiracists try to decode Masonic symbols, like those in the temple's stained-glass window.

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ers to find Masonic clues on the dust jacket of *The Da Vinci Code*. Perhaps because of such intrigue, the number of visitors to the temple has tripled over the past two years to 12,000.

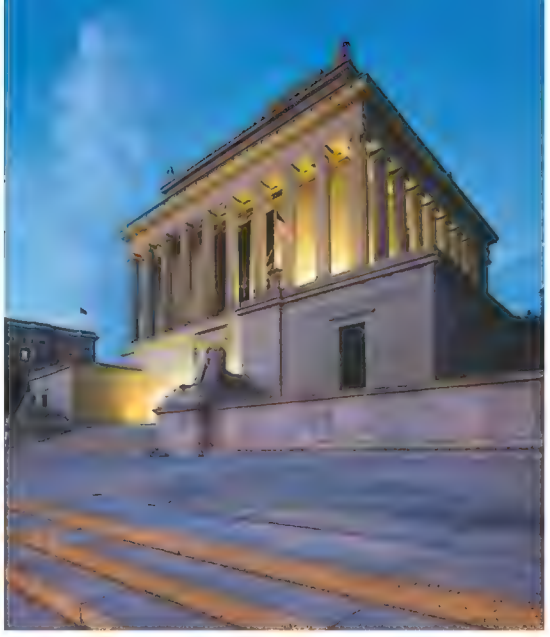
Which shows that Masons have nothing to hide, says retired Maj. Gen. Armen Garabedian, a Mason for 49 years. "This secret thing stems from way back," he says. "If we were a secret organization, tours would not be offered." The temple has always been open to the public.

Masons, who number 1.3 million in the United States (down from the 1959 peak of 4 million), maintain that their organization is dedicated to philanthropy. The organization donates more than two million dollars a day to healthcare, education and other causes, according to its spokesperson. Still, even Masons acknowledge that the group's origins are murky, though the fraternity probably emerged from a 15th-century medieval guild of master cathedral builders in Europe and evolved into an elite gentlemen's club. Freemasonry arrived in the United States in the early 18th century. Originally an all-male, white organization, today's Masons are ethnically diverse and some chapters include women.

By the early 1800s, actual tools of masonry, such as the compass and surveyor's square, had come to symbolize building one's own spiritual temple through virtue and discipline. The House of the Temple abounds in ancient, if not always interpretable, symbols, from the 17-ton sphinxes flanking the entrance to nine-point stars, two-headed eagles and images of the Greek god Hermes. A stained-glass window bears the ancient Egyptian "all-seeing eye," which, theorists of Freemason conspiracies like to note, also appears on the Great Seal of the United States, designed in 1782, and the dollar bill, which acquired the ocular icon in 1935, thanks to FDR, a Mason.

Completed in 1915, the House of the Temple was designed by James Russell Pope, architect of other notable Washington buildings, including the National Gallery of Art (1941) and the Jefferson Memorial (1943). "The temple launched Pope's career in Washington," says Paul Dolinsky, head of the Historic American Buildings Survey. "It became one of the most respected classical designs in the world at the time." Dolinsky says the Temple Room's gilded serpents and velvet drapings remind him of the set of the 1934 epic *Cleopatra*. "Cecil B. DeMille meets Freemasonry," he says. "It's really a larger-than-life Hollywood set."

Modeled on a Greek-style temple, the building contains no metal girders—just stone, as the ancients would have constructed it. The massive limestone facade is ringed with 33 Ionic columns. The number 33 proliferates in Masonic ritual, but the group's historians say they don't know what it symbolized originally. The dark green marble floors of the atrium lead to a grand staircase and a bust of Scottish Rite leader Albert Pike, a former Confederate general who spent 32 years developing Masonic rituals. Pike remains a controversial figure, with detractors alleging that he was a member of the Ku Klux Klan and a Satanist. In 1944 the Masons, by an act of Congress, gained permission to dig up Pike's remains from a local cemetery and bury them in the temple.



"If we were a secret organization, tours would not be offered."

The temple (top) welcomes all, but Masonic "ritual, password and grip," remain secret says Gen. Garabedian, amid portraits of famous Masons.

Among the artifacts on display is a Masonic membership certificate signed by Paul Revere. The silversmith reportedly recruited some brethren for the Boston Tea Party, in 1773. A large painting of George Washington laying the cornerstone for the Capitol and wearing a Masonic apron hangs in the banquet hall. Scores of portraits line a curving mahogany corridor in a sort of I-didn't-know-he-was-a-Mason gallery: Sam Ervin, John Glenn, Harry Truman, Arnold Palmer, John Wayne and Will Rogers among them. On the first floor is the reconstructed office of FBI director and Mason J. Edgar Hoover.

With its roster of power brokers, Masons have long been accused of political chicanery and undue influence, says Lynn Dumenil, history professor at Occidental College and author of *Freemasonry and American Culture, 1880-1930*. "Today, it's all pomp and circumstance. There are no deep dark secrets in the Scottish Rite building."

Yet visitors to the Washington temple pepper tour guides with skeptical questions. Were Masons involved in the Salem witch trials? Is there a secret tunnel connecting the building to the White House? During one recent tour, a guide pressed on a smudged spot on a stone wall just outside the sumptuous Temple Room. The wall gave way, revealing a spiral stairway that snaked up into darkness. A few visitors cautiously stepped forward. Surely, this is a secret passageway to some treasure! Indeed, the stairs lead to the loft for the great pipe organ.

DAVID A. TAYLOR *is a freelance writer and author of* Ginseng, the Divine Root.

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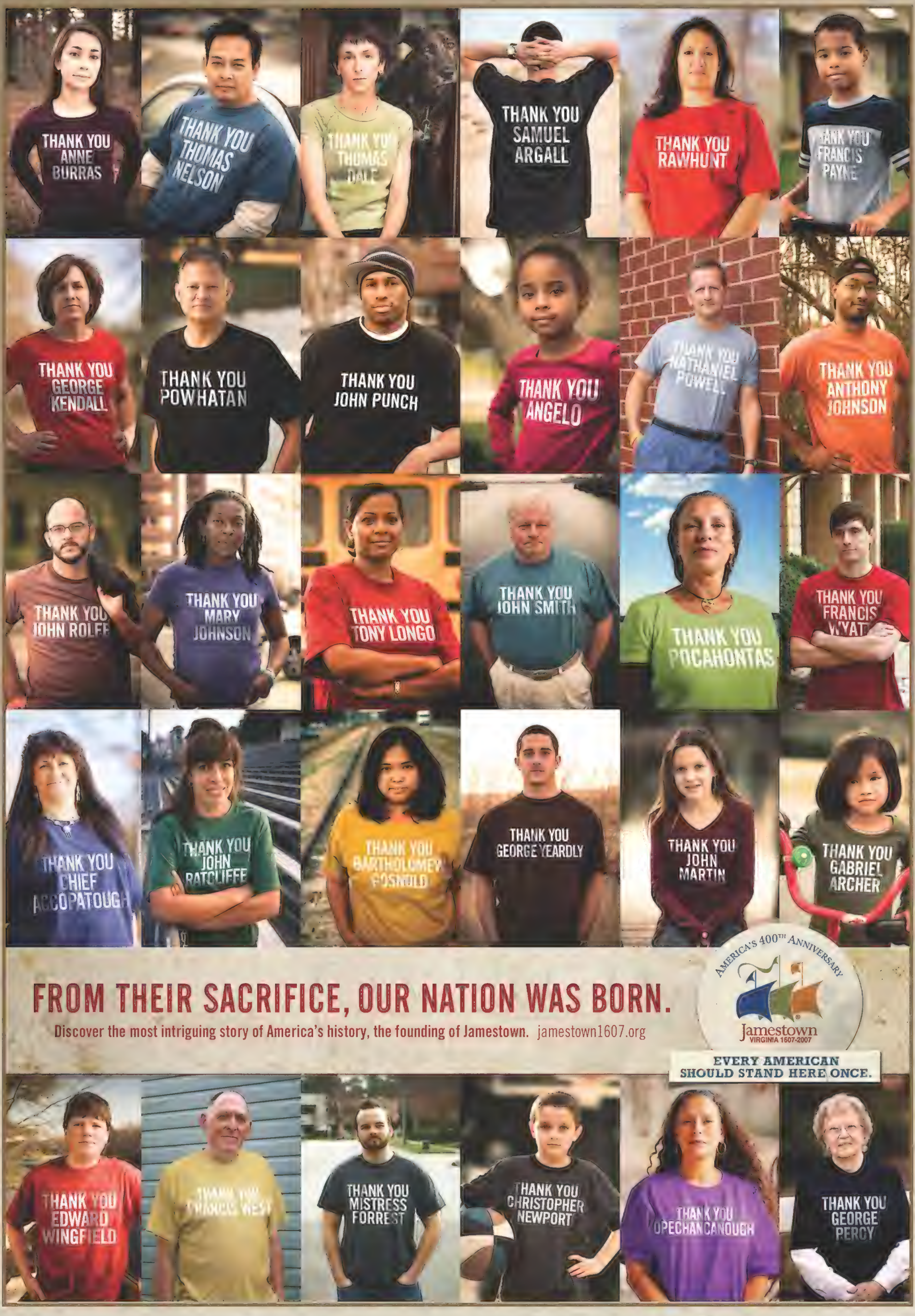

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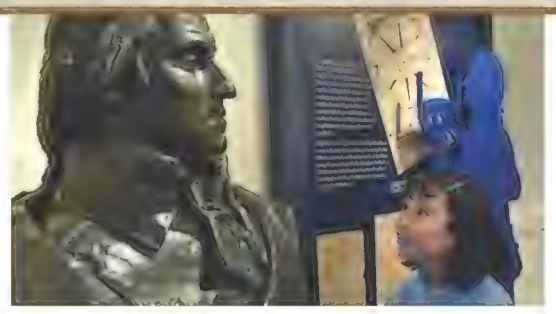

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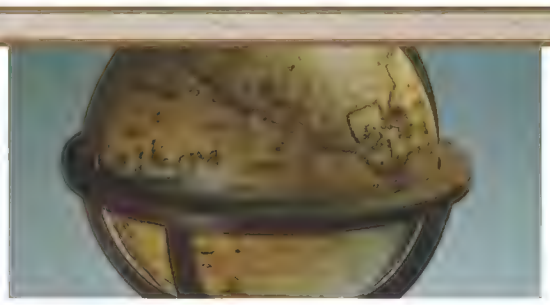

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BY ALISON McLEAN

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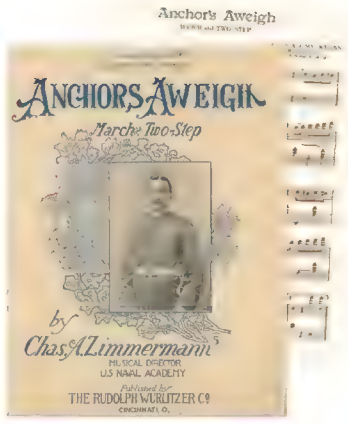
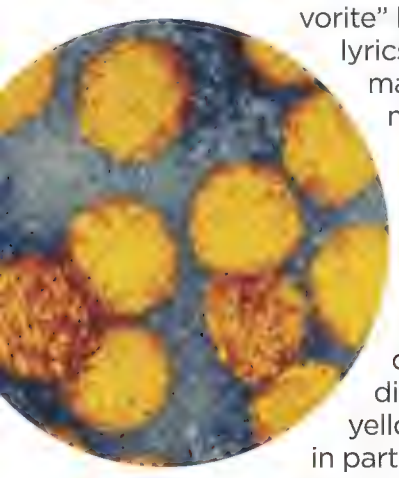


U.S. Naval Academy bandmaster Charles "Zimmy" Zimmerman copyrights *Anchors Aweigh*, the football march he composed for the class of 1907. With words by Midshipman Alfred Miles—"Sail Navy down the field and sink the Army, sink the Army Grey"—the song has become an "old favorite" by 1913. With later additional lyrics by George Lottman, it remains the U.S. Navy's unofficial march. Zimmerman dies in 1916, at age 54.



75 YEARS AGO
THE FEVER BREAKS

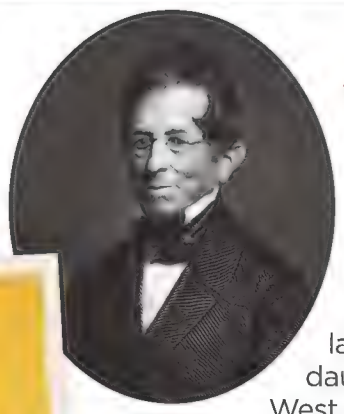
Researchers at the Rockefeller Foundation in New York City announce the discovery of an effective vaccine for yellow fever, on April 29, 1932. It is made, in part, from serum from six colleagues accidentally infected in the lab. Within four years, 85 lab workers are vaccinated, and the accidents end. Yellow fever vaccine becomes widely available in 1937; while some 300 million doses are given by the 1990s, lapses in vaccinations lead to a disease resurgence in West Africa.

60 YEARS AGO HOME RUN

"I am certain I can win them over in Brooklyn," asserts infielder Jackie Robinson, 28, on April 11, 1947, as he signs with the Dodgers to become the first African-American player in baseball's Major Leagues. Calmly enduring racial taunting, Robinson runs and steals bases with aggressive style and, by 1949, is named the National League's Most Valuable Player. Retiring with a .311 batting average in 1957, he is elected to the Hall of Fame in 1962. Robinson dies in 1972 at age 53.

130 YEARS AGO
SAVING FACE

Harvard baseball player James Tyng sports a catcher's mask—the first time the contraption is used in regular-season play—in a game against the Lynn Live Oaks on April 12, 1877. To protect Tyng from the new—and painful—curveball, team captain Fred Thayer bases the design on a fencing mask. Tyng makes far fewer errors, and Thayer patents the mask in 1878.



190 YEARS AGO
SIGNS OF THE TIME

Thomas Gallaudet (left) and Mason Cogswell open America's first school for deaf students, in a hotel in Hartford, Connecticut, on April 15, 1817. Gallaudet, who imports French teaching methods and sign language, is its first principal; Cogswell's daughter, Alice, the first pupil. Located in West Hartford since 1921, the American School of the Deaf, as it is known today, becomes a model for deaf education and a training ground for deaf teachers.

90 YEARS AGO GETTING INTO IT

After three years of neutrality while battles raged in Europe, the United States declares war on Germany on April 6, 1917. In the face of anti-war demonstrations, President Woodrow Wilson asks for the "undivided and willing support" of the American people. The first U.S. troops, under Gen. John Pershing, arrive in France in June. More than two million Americans will fight—and 116,000 die—before war's end in November 1918.

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IMPORTANT SAFETY INFORMATION: LUNESTA works quickly, and should be taken right before bed. Be sure you have at least eight hours to devote to sleep before becoming active. Until you know how you'll react to prescription LUNESTA, you should not drive or operate machinery. Do not use alcohol while taking LUNESTA. Most sleep medicines carry some risk of dependency. Side effects may include unpleasant taste, headache, drowsiness and dizziness. See important patient information on the next page.

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1, 2 AND 3 MG TABLETS

Please read this summary of information about LUNESTA before you talk to your doctor or start using LUNESTA. It is not meant to take the place of your doctor's instructions. If you have any questions about LUNESTA tablets, be sure to ask your doctor or pharmacist.

LUNESTA is used to treat different types of sleep problems, such as difficulty in falling asleep, difficulty in maintaining sleep during the night, and waking up too early in the morning. Most people with insomnia have more than one of these problems. You should take LUNESTA immediately before going to bed because of the risk of falling.

LUNESTA belongs to a group of medicines known as "hypnotics" or, simply, sleep medicines. There are many different sleep medicines available to help people sleep better. Insomnia is often transient and intermittent. It usually requires treatment for only a short time, usually 7 to 10 days up to 2 weeks. If your insomnia does not improve after 7 to 10 days of treatment, see your doctor, because it may be a sign of an underlying condition. Some people have chronic sleep problems that may require more prolonged use of sleep medicine. However, you should not use these medicines for long periods without talking with your doctor about the risks and benefits of prolonged use.

Side Effects

All medicines have side effects. The most common side effects of sleep medicines are:

- Drowsiness
- Dizziness
- Lightheadedness
- Difficulty with coordination

Sleep medicines can make you sleepy during the day. How drowsy you feel depends upon how your body reacts to the medicine, which sleep medicine you are taking, and how large a dose your doctor has prescribed. Daytime drowsiness is best avoided by taking the lowest dose possible that will still help you sleep at night. Your doctor will work with you to find the dose of LUNESTA that is best for you. Some people taking LUNESTA have reported next-day sleepiness.

To manage these side effects while you are taking this medicine:

- When you first start taking LUNESTA or any other sleep medicine, until you know whether the medicine will still have some effect on you the next day, use extreme care while doing anything that requires complete alertness, such as driving a car, operating machinery, or piloting an aircraft.
- Do not drink alcohol when you are taking LUNESTA or any sleep medicine. Alcohol can increase the side effects of LUNESTA or any other sleep medicine.
- Do not take any other medicines without asking your doctor first. This includes medicines you can buy without a prescription. Some medicines can cause drowsiness and are best avoided while taking LUNESTA.
- Always take the exact dose of LUNESTA prescribed by your doctor. Never change your dose without talking to your doctor first.

Special Concerns

There are some special problems that may occur while taking sleep medicines.

Memory Problems

Sleep medicines may cause a special type of memory loss or "amnesia." When this occurs, a person may not remember what has happened for several hours after taking the medicine. This is usually not a problem since most people fall asleep after taking the medicine. Memory loss can be a problem, however, when sleep medicines are taken while traveling, such as during an airplane flight and the person wakes up before the effect of the medicine is gone. This has been called "traveler's amnesia." Memory problems have been reported rarely by patients taking LUNESTA in clinical studies. In most cases, memory problems can be avoided if you take LUNESTA only when you are able to get a full night of sleep before you need to be active again. Be sure to talk to your doctor if you think you are having memory problems.

Tolerance

When sleep medicines are used every night for more than a few weeks, they may lose their effectiveness in helping you sleep. This is known as "tolerance." Development of tolerance to LUNESTA was not observed in a clinical study of 6 months' duration. Insomnia is often transient and intermittent, and prolonged use of sleep medicines is generally not necessary. Some people, though, have chronic sleep problems that may require more prolonged use of sleep medicine. If your sleep problems continue, consult your doctor, who will determine whether other measures are needed to overcome your sleep problems.

Dependence

Sleep medicines can cause dependence in some people, especially when these medicines are used regularly for longer than a few weeks or at high doses. Dependence is the need to continue taking a medicine because stopping it is unpleasant.

When people develop dependence, stopping the medicine suddenly may cause unpleasant symptoms (see *Withdrawal* below). They may find they have to keep taking the medicine either at the prescribed dose or at increasing doses just to avoid withdrawal symptoms.

All people taking sleep medicines have some risk of becoming dependent on the medicine. However, people who have been dependent on alcohol or other drugs in the past may have a higher chance of becoming addicted to sleep medicines. This possibility must be considered before using these medicines for more than a few weeks. If you have been addicted to alcohol or drugs in the past, it is important to tell your doctor before starting LUNESTA or any sleep medicine.

Withdrawal

Withdrawal symptoms may occur when sleep medicines are stopped suddenly after being used daily for a long time. In some cases, these symptoms can occur even if the medicine has been used for only a week or two. In mild cases, withdrawal symptoms may include unpleasant feelings. In more severe cases, abdominal and muscle cramps, vomiting, sweating, shakiness, and, rarely, seizures may occur. These more severe withdrawal symptoms are very uncommon. Although withdrawal symptoms have not been observed in the relatively limited controlled trials experience with LUNESTA, there is, nevertheless, the risk of such events in association with the use of any sleep medicine.

Another problem that may occur when sleep medicines are stopped is known as "rebound insomnia." This means that a person may have more trouble sleeping the first few nights after the medicine is stopped than before starting the medicine. If you should experience rebound insomnia, do not get discouraged. This problem usually goes away on its own after 1 or 2 nights.

If you have been taking LUNESTA or any other sleep medicine for more than 1 or 2 weeks, do not stop taking it on your own. Always follow your doctor's directions.

Changes In Behavior And Thinking

Some people using sleep medicines have experienced unusual changes in their thinking and/or behavior. These effects are not common. However, they have included:

- More outgoing or aggressive behavior than normal
- Confusion
- Strange behavior
- Agitation
- Hallucinations
- Worsening of depression
- Suicidal thoughts

How often these effects occur depends on several factors, such as a person's general health, the use of other medicines, and which sleep medicine is being used. Clinical experience with LUNESTA suggests that it is rarely associated with these behavior changes.

It is also important to realize it is rarely clear whether these behavior changes are caused by the medicine, are caused by an illness, or have occurred on their own. In fact, sleep problems that do not improve may be due to illnesses that were present before the medicine was used. If you or your family notice any changes in your behavior, or if you have any unusual or disturbing thoughts, call your doctor immediately.

Pregnancy And Breastfeeding

Sleep medicines may cause sedation or other potential effects in the unborn baby when used during the last weeks of pregnancy. Be sure to tell your doctor if you are pregnant, if you are planning to become pregnant, or if you become pregnant while taking LUNESTA.

In addition, a very small amount of LUNESTA may be present in breast milk after use of the medication. The effects of very small amounts of LUNESTA on an infant are not known; therefore, as with all other prescription sleep medicines, it is recommended that you not take LUNESTA if you are breast-feeding a baby.

Safe Use Of Sleep Medicines

To ensure the safe and effective use of LUNESTA or any other sleep medicine, you should observe the following cautions:

1. LUNESTA is a prescription medicine and should be used ONLY as directed by your doctor. Follow your doctor's instructions about how to take, when to take, and how long to take LUNESTA.
2. Never use LUNESTA or any other sleep medicine for longer than directed by your doctor.
3. If you notice any unusual and/or disturbing thoughts or behavior during treatment with LUNESTA or any other sleep medicine, contact your doctor.
4. Tell your doctor about any medicines you may be taking, including medicines you may buy without a prescription and herbal preparations. You should also tell your doctor if you drink alcohol. DO NOT use alcohol while taking LUNESTA or any other sleep medicine.
5. Do not take LUNESTA unless you are able to get 8 or more hours of sleep before you must be active again.
6. Do not increase the prescribed dose of LUNESTA or any other sleep medicine unless instructed by your doctor.
7. When you first start taking LUNESTA or any other sleep medicine, until you know whether the medicine will still have some effect on you the next day, use extreme care while doing anything that requires complete alertness, such as driving a car, operating machinery, or piloting an aircraft.
8. Be aware that you may have more sleeping problems the first night or two after stopping any sleep medicine.
9. Be sure to tell your doctor if you are pregnant, if you are planning to become pregnant, if you become pregnant, or if you are breastfeeding a baby while taking LUNESTA.
10. As with all prescription medicines, never share LUNESTA or any other sleep medicine with anyone else. Always store LUNESTA or any other sleep medicine in the original container and out of reach of children.
11. Be sure to tell your doctor if you suffer from depression.
12. LUNESTA works very quickly. You should only take LUNESTA immediately before going to bed.
13. For LUNESTA to work best, you should not take it with or immediately after a high-fat, heavy meal.
14. Some people, such as older adults (i.e., ages 65 and over) and people with liver disease, should start with the lower dose (1 mg) of LUNESTA. Your doctor may choose to start therapy at 2 mg. In general, adults under age 65 should be treated with 2 or 3 mg.
15. Each tablet is a single dose; do not crush or break the tablet.

Note: This summary provides important information about LUNESTA. If you would like more information, ask your doctor or pharmacist to let you read the Prescribing Information and then discuss it with him or her.

Rx only

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Around the Mall

SCENES AND SIGHTINGS FROM THE SMITHSONIAN MUSEUMS AND BEYOND

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BRENDAN SMIALOWSKI

"I want children to have an appreciation and desire for art," says the painter Maggie Michael (at the Hirshhorn).

YOUNG AT ART

Saturday morning, 10 o'clock: The Hirshhorn Museum lobby is full of children. Several glide by on Heelys, those hip sneakers on wheels. A woman warns, "No, Eliza, you cannot lick the sculptures like an ice-cream cone!" The kids meet up with one of contemporary art's rising stars, the abstract painter Maggie Michael. Wearing burgundy patent-leather boots and a T-shirt emblazoned with an artichoke, Michael, 32, leads the 20 or so kids, and a few adults, to a pedestaled sculpture by Theodore Roszak.

KIDS AT THE HIRSHHORN

{ CONTINUED FROM PAGE 39 }

It brings to mind an armored crustacean ready for battle. "It's OK to look at art and not know exactly what it is." The children move closer. "What do you see?" Michael asks.

"A monster," a girl insists.

"That's a skeleton of a dragon," a boy declares.

"A porcupine!"

A chaperoning mom says, "I see a candelabra."

Michael grins and says, "There are a lot of possibilities."

In 2002, Michael set the art world abuzz with her *Clones*, pieces created by pouring colorful latex paints on plexiglass. Critic Joe Shannon praised the works in *Art in America*, saying: "How does this utter simplicity prove so engaging? Why do we think that the artist is so intelligent, tasteful and courageous? So brazenly brilliant? Well, maybe because she is." Michael's work has been collected by the Hirshhorn and the Corcoran Gallery of Art.

She is the first to lead the Hirshhorn's Artist at Work program, a yearlong series for children ages 6 to 12. "Making art is not a rarefied practice that takes place in a vacuum," says Hirshhorn director Olga Viso, adding that the program's goal is to make the concepts of modern art "more approachable and accessible."

Michael—who lives in Washington, D.C. with her husband, sculptor Dan Steinhilber, and their 5-year-old son—teaches art part time to elementary students at a private school in the city. "I've had opportunities to do university teaching," she says, "but I really enjoy interacting with children and giving them the perspective of an artist."

Hirshhorn students size up a 1960 sculpture by Peter Agostini.

In a studio near the Hirshhorn's sculpture garden, it's as noisy as a playground at recess. Michael helps the budding sculptors assemble works out of Styrofoam, wood blocks and wire. One boy uses foam disks, spheres and shower curtain rings to make his own fantastical version of the solar system. A girl, brow furrowed, tries to glue scraps of tinfoil to a wooden rod. Some pieces fall off. She sighs. Michael crouches beside her.

"Those are falling just like the cherry blossom flowers that fly away every year," Michael says. "Don't be upset. Just think of it in a new way."

{ BY COURTNEY JORDAN }

For more on artist Maggie Michael, visit Smithsonian.com.

Bird Flu's Route to North America?

Researchers have a new theory about how avian influenza is most likely to reach the United States: through live poultry and poultry products imported from Asia and other infected regions to Latin America, where it could spread to wild fowl that migrate to North America.

The finding differs from a major 2006 U.S. government report, which predicted that migratory birds would carry the highly pathogenic H5N1 virus from Siberia to Alaska and has led to a $29 million surveillance program. "We think focusing all the efforts on Alaska is misguided," says Peter Marra, an ecologist at the Smithsonian Migratory Bird Center and one of the study's six co-authors. Currently, the U.S restricts poultry imports, quarantining live birds and prohibiting bringing any in from regions with bird flu outbreaks. Marra says Latin American countries should do the same or even consider banning foreign poultry and poultry products (such as fertilizer). The study also involved New York's Consortium for Conservation Medicine and the UK's Royal Society for the Protection of Birds.

Bird flu (inset, a microscope image of the H5N1 virus, in gold) could enter the U.S. from Latin America, say scientists Peter Marra (far left) and Robert Fleischer.

Since 2003, the H5N1 virus has spread to birds in Asia, Africa and Europe. It has killed more than 160 people, virtually all of whom came in close contact with infected poultry. H5N1 hasn't mutated into a form that readily spreads from person to person. Whether it will "depends on the time frame you're looking at," says Smithsonian geneticist Robert Fleischer, who also worked on the study. "It might not be this year or next year. It could be ten years from now."

{ BY AMY CRAWFORD }

TOP, BOTTOM: BRENDAN SMIALOWSKI; MIDDLE: CENTERS FOR DISEASE CONTROL

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FROM THE SECRETARY | Hot Topics

An ice-diving course in Svalbard, Norway, is only the tip of the Smithsonian science iceberg

THIS MONTH, a small group of scientists will meet in Ny-Alesund, Svalbard, the northernmost community in the world. (Year-round population: 30.) There, among Norwegian fiords, less than 800 miles from the North Pole, the scientists will drill through several feet of ice to make a hole about four feet across. Then they will put on dry suits and scuba gear and dive into the clear, frigid waters of the Arctic.

People around the world know the Smithsonian for its fascinating museums and vast collections. Residents of Svalbard also know the Institution for this biannual ice-diving course. In fact, for the past 16 years, the Smithsonian has been familiarizing scientists with the latest diving technologies and equipment, and training them to safely conduct their important research in the most extreme and unforgiving environments of both the Arctic and Antarctic regions.

In frigid Svalbard, scientists take the plunge for research.

The activities in Svalbard—both the ice-diving course and a concurrent academic workshop, also hosted by the Smithsonian along with its partners at the National Science Foundation—will no doubt be a hot topic in the warmer environs of springtime Washington, D.C. In early May, as part of the massive scientific program called International Polar Year, or IPY, Smithsonian's Under Secretary for Science, David Evans, will host a two-day symposium: "Smithsonian at the Poles: Contributions to International Polar Year Science." (Occurring roughly every 50 years, this is the fourth IPY.)

Although the ice-diving program is relatively recent, Smithsonian polar science goes back 150 years, resulting in some of the world's foremost collections of Arctic and Antarctic materials. Scholars across many of the Institution's museums and scientific centers continue to carry out cutting-edge research. The symposium will bring together these and other renowned scholars and their collaborators in Arctic and Antarctic research, who will give special attention to the global impact of warming trends and to the changes in polar systems past, present and future.

One session will be dedicated to the National Museum of Natural History's cataloging and lending of its 900,000-strong Antarctic invertebrate collection. Another will focus on the Smithsonian Environmental Research Center's work on the impact to an ecosystem when significant changes to snow and ice sheets introduce new species and displace others. Still another session will discuss the Smithsonian, NASA and NSF program that collects, cares for and stores the more than 12,000 meteorites—from the moon, Mars and places unknown—recovered from Antarctic ice sheets.

Whether the subject is astrophysics or anthropology, the symposium promises to be an extraordinary scientific meeting—one that takes place at a critical time and may even change the way we look at our planet. That has certainly been the mark of previous International Polar Years. In fact, next fall the National Air and Space Museum will host another conference dedicated solely to the historical significance of past IPYs.

Participants will no doubt recall James Van Allen, the scientist credited with discovering the earth's radiation belts that now bear his name. Sitting in his living room in Silver Spring, Maryland, in 1950, Van Allen and about ten friends decided to revive the idea of IPY, concentrating on earth and space sciences and calling it the International Geophysical Year. It was held in 1957-58, and many say it prompted the Soviet Union to launch *Sputnik*. The space race was on. IPY, in many ways, was the starting line.

So what will be the legacy of the International Polar Year starting this month? No one knows. But you can bet your swim fins the Smithsonian will be a part of it.

LAWRENCE M. SMALL
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FLOWER POWER

An imaginative installation recalls an all-but-forgotten art movement

BY OWEN EDWARDS

ITALY'S early- to mid-20th-century Futurists eventually ended up—wouldn't you know?—haunted by their past. Led by the Italian poet Filippo Marinetti, who published *The Futurist Manifesto* in 1909, the movement was, appropriately enough, ahead of its time. Worshipers of machinery, industry and the seductions of raw power, the Futurists seemed to have catalyzed an aesthetic revolution bound for glory. Indeed, they would inspire artists, writers and composers in the middle years of the century.

But while they were clearly onto ideas that would influence artists as diverse as the French painter Marcel Duchamp (1887-1968) and American photographer and painter Charles Sheeler (1883-1965), the Futurists would void their own place in posterity. The movement's infatuation with speed and power was shared by Benito Mussolini, and when, in 1918, Marinetti made the distinct mistake of founding a political party based on the 1909 manifesto, Mussolini's burgeoning Fascisti absorbed it within a year. And there, in a manner of speaking, went the neighborhood.

That association damned the movement in most of the art world, tainting the sculpture and painting of many talented Italian artists during and after World War II. Even now, Futurism's history has colored our perceptions of the work produced by its artists. Perhaps none deserves obscurity less than Giacomo Balla, a painter and sculptor of powerful originality who got involved with Marinetti in his late 30s, when he was already well established. Today, a series of his sculptures—antic, angular blooming flowers worked in wood, a witty spring bouquet—grace a third-floor gallery at the Smithsonian's Hirshhorn Museum and Sculpture Garden. The pieces testify to Balla's contributions as "Futurism's lighthearted master experimenter," says Jeffrey Schnapp, director of the Stanford University Humanities

Sculptor Giacomo Balla's spiky botanicals testify to his role as "Futurism's lighthearted experimenter."

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Lab and an authority on modern Italian art. The artist, he adds, was "always eager for new adventures, from the comic to the sublime, from the 1910s well into the 1940s."

The story of the dangerous liaison that eventually damaged the reputation of Balla and his fellow artists, however, is far from simple. According to Schnapp, "Futurism's complex pas de deux with Fascism is, in the end, reducible to the story of the ups and downs of the friendship between the two leaders, Marinetti and Mussolini." While the careers of both were interwoven, the poet and the dictator "were also in tension and sometimes even in open conflict," Schnapp says, "so we shouldn't fall into the trap of reducing Futurism to Fascism or vice versa. In fact, Marinetti's party platform called for the creation of an 'agitatorium' made up of members under 30 who would re-energize Italy's parliamentary democracy."

Balla, who had begun sculpting in 1914, produced the plans and drawings for the flowers between 1918 and 1925. He intended the pieces to be mass-produced, in keeping with the Futurist desire to take fine art to the assembly line. "The flowers were not produced during Balla's lifetime, but in 1968, ten years after his death," says Hirshhorn curator Anne Ellegood. "Galleria dell'Obelisco in Rome had an edition of 40 made, and Joseph Hirshhorn bought one of these sets."

The winds of war blasted away the esteem that Giacomo Balla—whose influence, Schnapp says, can be seen in American artists from Marsden Hartley to Joseph Stella—might have enjoyed had he and other Futurists chosen their friends more wisely (or had been chosen by other friends). The Hirshhorn's flower sculptures, and three additional pieces by Balla in the museum's collection, offer a timely opportunity to get back to the Futurists.

OWEN EDWARDS *is a freelance writer and author of the book* Elegant Solutions.

Q&A

HERB ALPERT donated $300,000 to the Smithsonian Institution to support Jazz Appreciation Month each April through 2009. The famed trumpeter, bandleader (The Tijuana Brass) and record-company founder (A&M Records) spoke with the magazine's David Zax.

THE COVER OF YOUR 1965 ALBUM, *WHIPPED CREAM AND OTHER DELIGHTS*—A WOMAN CLAD ONLY IN A FROTHY CREAM—BECAME A POP CULTURE ICON. When my partner and I saw it, we thought maybe it was pushing it a little too much. But it seemed like a lot of people bought the album just for the cover. I think it's one of my best albums. It sold 14 million copies, and I think it was the breakthrough album. It had "A Taste of Honey" on it.

IN 1966, YOU WERE BIGGER THAN THE BEATLES. WHAT WAS IT LIKE TO HEAR YOUR MUSIC JUST ABOUT EVERYWHERE IN THE '60S? It was a little scary. On one hand it was fun to realize that we were selling so many records, but on the other hand it was a little uncomfortable. All that attention is hard to put in its proper place.

DOES IT FRUSTRATE YOU THAT MOST PEOPLE ASSOCIATE YOUR SONG "THE SPANISH FLEA" WITH THE TELEVISION SHOW "THE DATING GAME"? No. I think it's nice. I recorded the vocal of "This Guy's in Love with You," and people come up to me regularly and tell me how much they like the song, how they got married to it. I'm not talking about older folks—I'm talking about young kids.

YOUR MUSIC COMBINES LATIN AND JAZZ INFLUENCES. I like the improvisational nature of jazz. Jazz is one of the truly great art forms that started in this country. We should be very proud of it.

DID '60S POP MUSIC HAVE MORE IMPROVISATION THAN TODAY? No, it had less. In the '60s, pop music was pretty well formatted to two minutes, maybe three minutes maximum, so you didn't really have a lot of room for stretching out.

AND YET DESPITE YOUR LOVE OF IMPROVISATION YOU FLOURISHED. I flourished with my idea of presenting music that had interesting melodies. This is going to sound strange, but I never rehearsed these songs before I recorded them. So I always had this very first-time impression of the melodies when I was recording, as opposed to working out a piece and having it down so that there's nothing new to offer when you finally present it. So I was looking at it from a jazz point of view, but it was still pretty formatted.

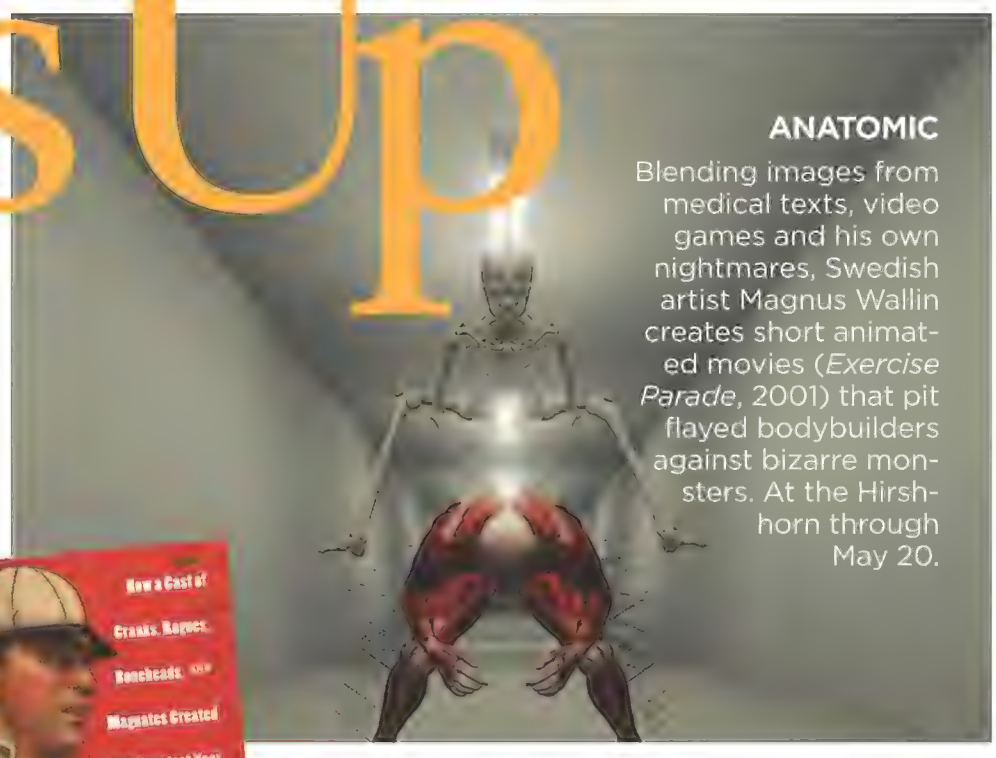
YOU ARE ALSO A PAINTER AND A SCULPTOR. The process is very similar [to making music]. You start creating and some good things present themselves.

WHAT ALBUM WOULD YOU TAKE TO A DESERT ISLAND? I'd probably take something by Ravel, some Miles Davis.

ROBERT KNIGHT / RETNA; HERB ALPERT COLLECTION

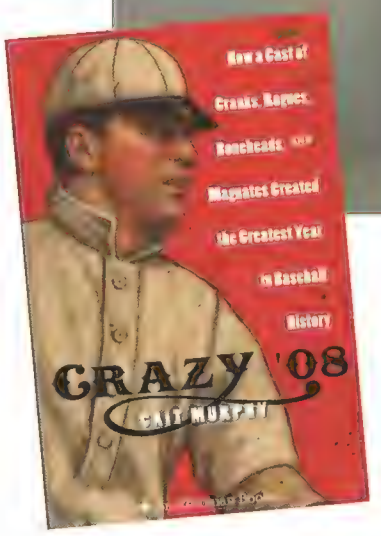
What's Up

CRAFTY "He's a superhero we came up with," say Albuquerque-based Lisa Holt and Harlan Reano of their ceramic *Pueblo Fire Warrior*. The Native American potters join 119 other artists and artisans at the 25th Smithsonian Craft Show, at the National Building Museum, April 19 to 22.



ANATOMIC

Blending images from medical texts, video games and his own nightmares, Swedish artist Magnus Wallin creates short animated movies (*Exercise Parade*, 2001) that pit flayed bodybuilders against bizarre monsters. At the Hirshhorn through May 20.



THE OLD BALLGAME

Nostalgic for baseball before strikes and steroids? In 1908 the national pastime featured gambling, bribery and riots. But Cait Murphy, author of *Crazy '08* (just released by Smithsonian Books), says it was also "the best season in baseball history."

SWING TIME

The Museum of American History has designated April Jazz Appreciation Month. Films, lectures and concerts at numerous venues celebrate the music Duke Ellington called "the kind of a man you wouldn't want your daughter to associate with."

WHITE HOUSE CHINA POLICY

Starting April 3, a select display of presidential china is on view at the National First Ladies' Library in Canton, Ohio (founded by Mary Regula, wife of Smithsonian Regent Emeritus Ralph Regula). The dishes are from the collection of Carter administration diplomat Set Momjian, who has been known to serve dinner on Harry Truman's plates (above) and drink coffee out of FDR's teacup.

{ BY AMY CRAWFORD }

CLOCKWISE FROM TOP RIGHT: MAGNUS WALLIN / HIRSHHORN MUSEUM, SI; SI BOOKS; NMAH, SI; SET MOMJIAN COLLECTION; LISA HOLT & HARLAN REANO / SI CRAFT SHOW

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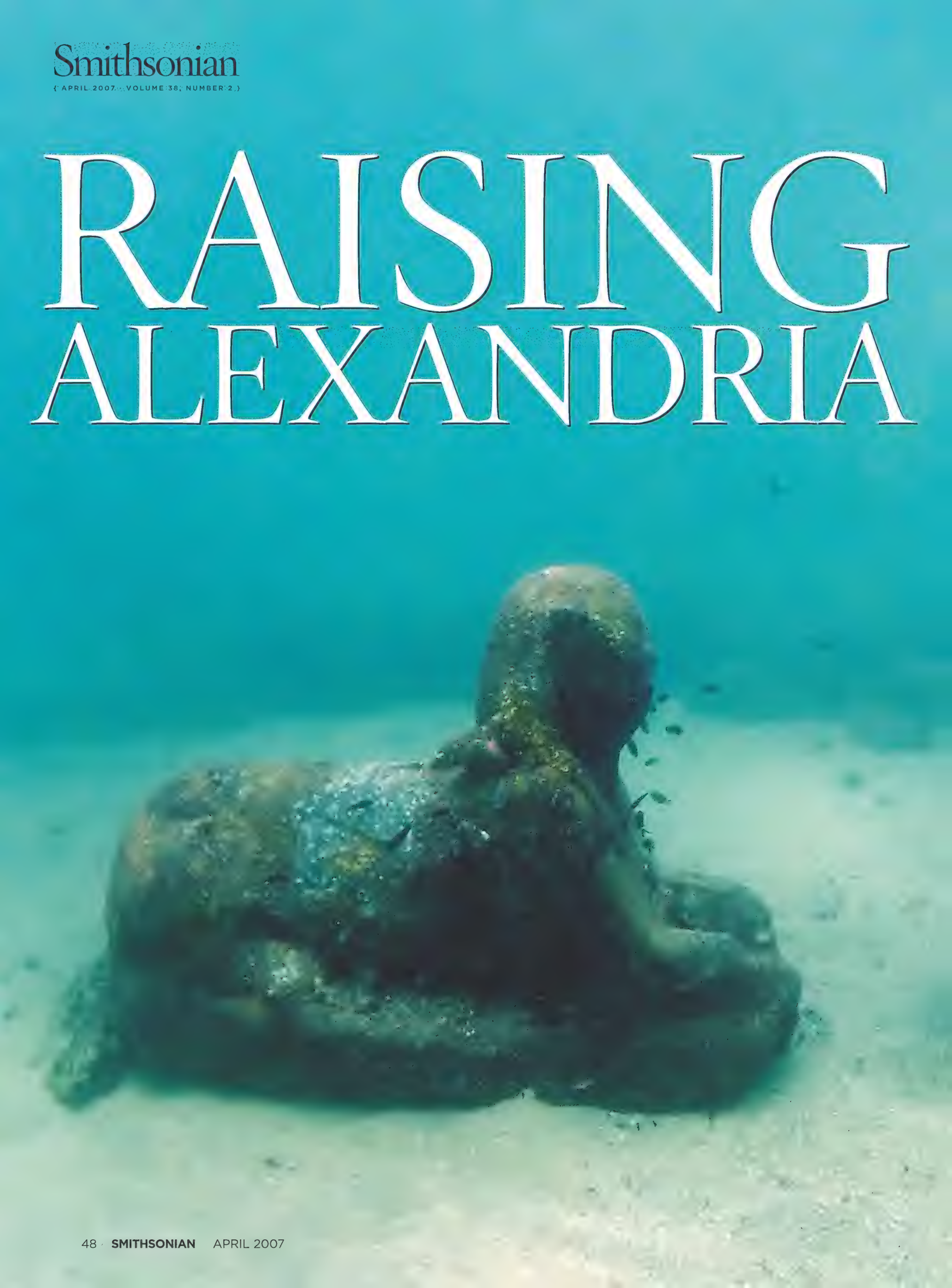
Smithsonian
{ APRIL 2007 VOLUME 38, NUMBER 2 }

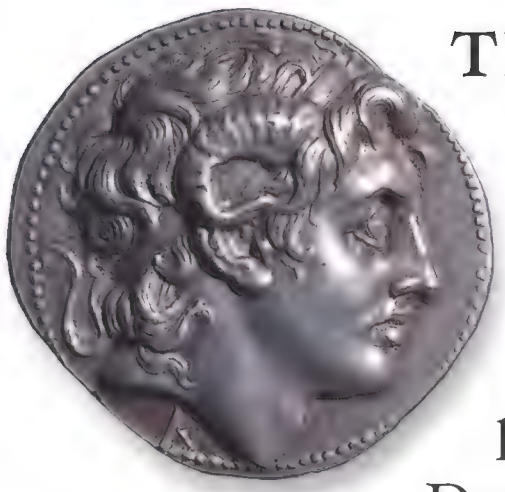
RAISING ALEXANDRIA



More than 2,000 years after Alexander the Great founded the city, archaeologists are discovering its fabled remains, from the likely site of Cleopatra's palace to pieces of an astonishing lighthouse that was one of the Seven Wonders of the World

BY ANDREW LAWLER **PHOTOGRAPHS BY STÉPHANE COMPOINT**

Coming face to face with the past, researchers exploring the Egyptian city and its harbor (a member of an underwater archaeology team inspects a sphinx that is at least 3,000 years old) have found new clues to life in the ancient imperial capital.



THERE'S NO SIGN of the grand marbled metropolis founded by Alexander the Great on the busy streets of this congested Egyptian city of five million, where honking cars spouting exhaust whiz by shabby concrete buildings. But climb down a rickety ladder a few blocks from Alexandria's harbor, and the legendary city suddenly swims into view.

Down here, standing on wooden planks stretching across a vast underground chamber, the French archaeologist Jean-Yves Empereur points out Corinthian capitals, Egyptian lotus-shaped columns and solid Roman bases holding up elegant stone arches. He picks his way across the planks in this ancient cistern, which is three stories deep and so elaborately constructed that it seems more like a cathedral than a water supply system. The cistern was built more than a thousand years ago with pieces of already-ancient temples and churches. Beneath him, one French and one Egyptian worker are examining the stonework with flashlights. Water drips, echoing. "We supposed old Alexandria was destroyed," Empereur says, his voice bouncing off the damp smooth walls, "only to realize that when you walk on the sidewalks, it is just below your feet."

TOP: ERICH LESSING / ART RESOURCE, NY

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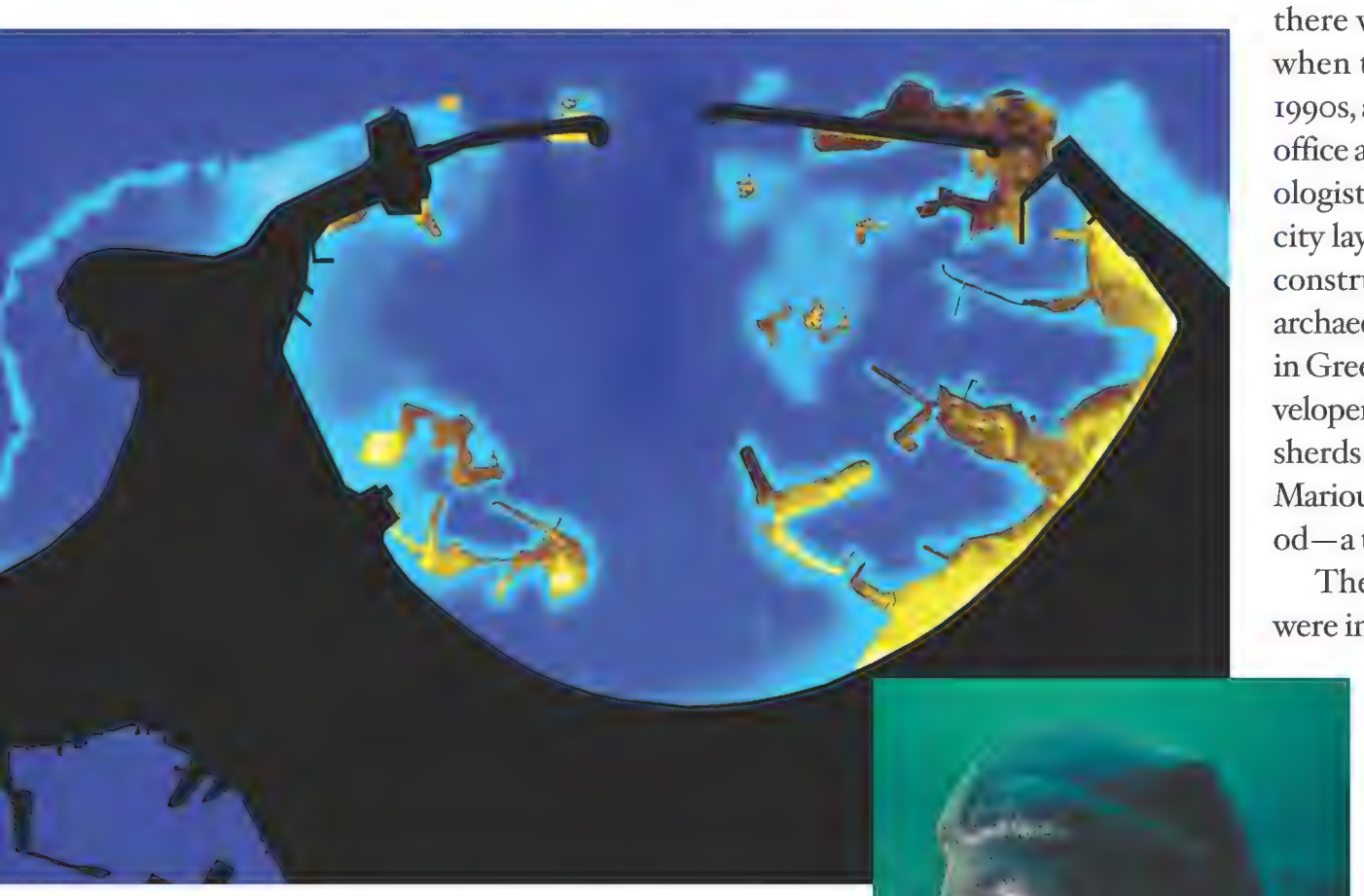
Archaeologists are rescuing what they can of the city built by Alexander the Great (opposite, inset). As construction crews waited, archaeologists conducted a "salvage excavation" of a third-century B.C. necropolis (opposite, in 1998), now covered by a highway. An underground water supply system (this page) preserved ancient building blocks, columns and arches.

With all its lost grandeur, Alexandria has long held poets and writers in thrall, from E. M. Forster, author of a 1922 guide to the city's vanished charms, to the British novelist Lawrence Durrell, whose *Alexandria Quartet*, published in the late 1950s, is a bittersweet paean to the haunted city. But archaeologists have tended to give Alexandria the cold shoulder, preferring the more accessible temples of Greece and the rich tombs along the Nile. "There is nothing to hope for at Alexandria," the English excavator D. G. Hogarth cautioned after a fruitless dig in the 1890s. "You classical archaeologists, who have found so much in Greece or in Asia Minor, forget this city."

Hogarth was spectacularly wrong. Empereur and other scientists are now uncovering astonishing artifacts and rediscovering the architectural sublimity, economic muscle and intellectual dominance of an urban center that ranked second only to ancient Rome. What may be the world's oldest surviving university complex has come to light, along with one of the Seven Wonders of the World, the Pharos, the 440-foot-high lighthouse that guided ships safely into the Great Harbour for nearly two millennia. And researchers in wet suits probing the harbor floor are mapping the old quays and the fabled royal quarter, including, just possibly, the palace of that most beguiling of all Alexandrians, Cleopatra. The discoveries are transforming vague legends about Alexandria into proof of its profound influence on the ancient world.



The city's coastline looked very different in Alexander's day (above, the modern city is in black, and those portions of the ancient city that are now underwater are in gold). Divers and excavators have found more than 500 artifacts and remains of a palace, temples and a port (right, a head thought to represent Caesarion, the son of Cleopatra and Julius Caesar) and have brought many to the surface.

"I'm not interested in mysteries, but in evidence," Empereur says later in his comfortable study lined with 19th-century prints. Wearing a yellow ascot and tweed jacket, he seems a literary figure from Forster's day. But his Center for Alexandrian Studies, located in a drab modern high-rise, bustles with graduate students clacking on computers and diligently cataloging artifacts in the small laboratory.

Empereur first visited Alexandria 30 years ago while teaching linguistics in Cairo. "It was a sleepy town then," he recalls. "Sugar and meat were rationed, it was a war economy, and there was no money for building." Only when the economy revived in the early 1990s, and Alexandria began sprouting new office and apartment buildings, did archaeologists realize how much of the ancient city lay undiscovered below 19th-century constructions. By then Empereur was an archaeologist with long experience digging in Greece, and he watched in horror as developers hauled away old columns and potsherds and dumped them in nearby Lake Mariout. "I realized we were in a new period—a time to rescue what we could."

The forgotten cisterns of Alexandria were in particular danger of being filled in by new construction. During ancient times, a canal from the Nile diverted floodwater from the great river to fill a network of hundreds, if not thousands, of underground chambers, which were expanded, rebuilt and renovated. Most were built after the fourth century, and their engineers made liberal use of the magnificent stone columns and blocks from aboveground ruins.

Few cities in the ancient or medieval world could boast of such a sophisticated water system. "Underneath the streets and houses, the whole city is hollow," reported Flemish traveler Guillebert de Lannoy in 1422. The granite-and-marble Alexandria that the poets thought long gone still survives, and Empereur hopes to open a visitors' center for one of the cisterns to show something of Alexandria's former glory.

THE ALEXANDRIA OF ALEXANDRIAS

AT THE ORDER of the brash general who conquered half of Asia, Alexandria—like Athena out of Zeus' head—leapt nearly full grown into existence. On an April day in 331 B.C., on his way to an oracle in the Egyptian desert before he set off to subdue Persia, Alexander envisioned a metropolis

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ANDREW LAWLER *wrote about a newfound tomb in Egypt's Valley of the Kings in the July 2006 issue.* **STÉPHANE COMPOINT** *is a photographer based in Paris.*

FRANCK GODDIO / HILTI FOUNDATION; CHRISTOPH GERIGK / FRANCK GODDIO / HILTI FOUNDATION

linking Greece and Egypt. Avoiding the treacherous mouth of the Nile, with its shifting currents and unstable shoreline, he chose a site 20 miles west of the great river, on a narrow spit of land between the sea and a lake. He paced out the city limits of his vision: ten miles of walls and a grid pattern of streets, some as wide as 100 feet. The canal dug to the Nile provided both fresh water and transport to Egypt's rich interior, with its endless supply of grain, fruit, stone and skilled laborers. For nearly a millennium, Alexandria was the Mediterranean's bustling center of trade.

But less than a decade after he founded it, Alexander's namesake became his tomb. Following Alexander's death in Babylon in 323 B.C., his canny general Ptolemy—who had been granted control of Egypt—stole the dead conqueror's body before it reached Macedonia, Alexander's birthplace. Ptolemy built a lavish structure around the corpse, thereby ensuring his own legitimacy and creating one of the world's first major tourist attractions. Amid dozens of "Alexandrias" in the fragmented empire, Ptolemy's city quickly became the most important.

Ptolemy, already rich from his Asian conquests and now controlling Egypt's vast wealth, embarked on one of the most astonishing building sprees in history. The Pharos, soaring more than 40 stories above the harbor and lit at night (no one knows exactly how), served the practical purpose of guiding ships to safety, but it also told arriving merchants and politicians that this was a place to be reckoned with. The city's wealth and power were underscored by the temples, wide colonnaded streets, public baths, a massive gymnasium and, of course, Alexander's tomb.

Though schooled in war, Ptolemy proved to be a great patron of intellectual life. He founded the Mouseion, a research institute with lecture halls, laboratories and guest rooms for visiting scholars. Archimedes and Euclid worked on mathematics and physics problems here, and the astronomer Aristarchus of Samos determined here that the sun was the center of the solar system. Ptolemy and his successors also created botanical and zoological gardens to show off rare species.

Ptolemy's son added the famous library to the Mouseion complex. The first chief of the library, Eratosthenes, measured the earth's circumference to an accuracy within a few hundred miles. The library contained an unparalleled collection of scrolls thanks to a government edict mandating that foreign ships hand over scrolls for copying.

And the ships arrived from all directions. Some sailing on the monsoon winds imported silks and spices from the western coast of India via the Red Sea; the valuable cargo was then taken overland to the Mediterranean for transport to Alexandria. One ship alone in the third century B.C. carried 60 cases of aromatic plants, 100 tons of elephant tusks and 135 tons of ebony in a single voyage. Theaters, bordellos, villas and warehouses sprang up. Ptolemy granted Jews their own quarter, near the royal quarter, while Greeks, Phoenicians, Nabateans, Arabs and Nubians rubbed shoulders on the quays and in the marketplaces. Lest they be overrun, the Greek-speaking rulers periodically banished the far more numerous Egyptians to the countryside.

The go-go era of the Ptolemies ended with the death, in 30 B.C., of the last Ptolemy ruler, Cleopatra. Like her ancestors, she ruled Egypt from the royal quarter fronting the harbor. Rome turned Egypt into a colony after her death, and Alexandria became its funnel for grain. Violence between pagans and Christians, and among the many Christian sects, scarred the city in the early Christian period.

One of the Seven Wonders of the World, Alexandria's 40-story lighthouse, the Pharos, was once thought to be built entirely in a Greek style (far left). But new archaeology suggests that it was ornamented with Egyptian art (a statue, left). It fell into ruin in the 1300s, and the Qait Bey fort (foreground, above) was built in the 1400s, likely with blocks from the lighthouse.

LOWER LEFT: GAMMA PRESSE

When Arab conquerors arrived in the seventh century A.D., they built a new capital at Cairo. But Alexandria's commercial and intellectual life continued until medieval times. The Arab traveler Ibn Battuta rhapsodized in 1326 that "Alexandria is a jewel of manifest brilliance, and a virgin decked out with glittering ornaments" where "every wonder is displayed for all eyes to see, and there all rare things arrive." Soon after, however, the canal from Alexandria to the Nile filled in, and the battered Pharos tumbled into the sea.

By the time Napoleon landed at Alexandria as a first stop on his ill-fated campaign to subdue Egypt, in 1798, only a few ancient monuments and columns were still standing. Two decades later, Egypt's brutal and progressive new ruler—Mohammad Ali—chose Alexandria as his link to the expanding West. European-style squares were laid out, the port expanded, the canal reopened.

Franck Goddio has recovered hundreds of artifacts from Alexandria's harbor (at a Berlin museum with the granite head seen underwater on p. 52).

For more than a century, Alexandria boomed as a trade center, and it served as Egypt's capital whenever the Cairo court fled the summer heat. Greek, Jewish and Syrian communities existed alongside European enclaves. The British—Egypt's new colonial rulers—as well as the French and Italians built fashionable mansions and frequented the cafés on the trendy corniche along the harbor. Though Egyptians succeeded in throwing off colonial rule, independence would prove to be Alexandria's undoing. When President Nasser—himself an Alexandrian—rose to power in the 1950s, the government turned its back on a city that seemed almost foreign. The international community fled, and Alexandria slipped once again into obscurity.

THE FIRST SKYSCRAPER

THE REDISCOVERY of part of ancient Alexandria began a dozen years ago, when Empereur went for a swim. He had joined an Egyptian documentary film crew that wanted to work underwater near the 15th-century fort of Qait Bey, now a museum and tourist site. The Egyptian Navy had raised a massive statue from the area in the 1960s, and Empereur and the film crew thought the waters would be worth exploring. Most scholars believed that the Pharos had stood nearby, and that some of the huge stone blocks that make up the fortress may have come from its ruins.

No one knows exactly what the Pharos looked like. Literary references and sketches from ancient times describe a structure that rose from a vast rectangular base—itself a virtual skyscraper—topped by a smaller octagonal section, then a cylindrical section, culminating in a huge statue, probably of Poseidon or Zeus. Scholars say the Pharos, completed about 283 B.C., dwarfed all other human structures of its era. It survived an astonishing 17 centuries before collapsing in the mid-1300s.

One calm spring day in the early 1990s, Empereur and cinematographer Asma el-Bakri, carrying a bulky 35-millimeter camera, slipped beneath the waters near the fort, which had been seldom explored because the military had put the area off limits. Empereur was stunned as he swam amid hundreds of building stones and shapes that looked like statues and columns. The sight, he recalls, made him dizzy.

But after coming out of the water, he and el-Bakri watched in horror as a barge crane lowered 20-ton concrete blocks into the waters just off Qait Bey to reinforce the breakwater near where they had been filming. El-Bakri pestered government officials until they agreed to halt the work, but not before some 3,600 tons of concrete were unloaded, crushing many artifacts. Thanks to her intervention, Empereur—who had experience examining Greek shipwrecks in the Aegean Sea—found himself back in diving gear, conducting a detailed survey of thousands of relics.

One column had a diameter of 7.5 feet. Corinthian capitals, obelisks and huge stone sphinxes littered the seafloor. Curiously, half a dozen columns carved in the Egyptian style had markings dating back to Ramses II, nearly a millennium before Alexandria was founded. The Greek rulers who built Alexandria had taken ancient Egyptian monuments from along the Nile to provide gravitas for their nouveau riche city.

Empereur and his team also found a colossal statue, obviously of a Pharaoh, similar to the statue the Egyptian Navy had raised in 1961. He believes the pair represent Ptolemy I

MARKUS SCHREIBER / ASSOCIATED PRESS

and his wife, Berenice I, carved in Egyptian style and presiding over a nominally Greek city. With their bases, the statues would have stood 40 feet tall. Other statues with a strong Egyptian element may have lined the base of the lighthouse. The Pharos, long thought to be an example of pure Greek architecture, instead drew on the engineering and stylistic savvy of both Egyptian and Greek cultures, Empereur concludes.

Over the years, he and his co-workers have photographed more than 3,000 surviving pieces on the seafloor, including many columns, 30 sphinxes and 5 obelisks. He estimates that another 2,000 objects still need cataloging. Most will remain safely underwater, Egyptian officials say. Empereur also believes he has found the lintel and 40-foot-high doorjambs that marked the entrance to the Pharos.

UNDERWATER PALACES

FRANCK GODDIO is an urbane diver who travels the world examining shipwrecks, from a French slave ship to a Spanish galleon. He and Empereur are rivals—there are rumors of legal disputes between them and neither man will discuss the other—and in the early 1990s Goddio began to work on the other side of Alexandria's harbor, opposite the fortress. He discovered columns, statues, sphinxes and ceramics associated with the Ptolemies' royal quarter—possibly even the palace of Cleopatra herself.

Perhaps most significant, he has found that much of ancient Alexandria sank beneath the waves and remains remarkably intact. Using sophisticated sonar instruments and global positioning equipment, and working with scuba divers, Goddio has discerned the outline of the old port's shoreline. The new maps reveal foundations of wharves, storehouses and temples as well as the royal palaces that formed the core of the city, now buried under Alexandrian sand. Radiocarbon dating of wooden planks and other excavated material shows evidence of human activity from the fourth century B.C. to the fourth century A.D. At a recent meeting of scholars at Oxford University, the detailed topographical map Goddio projected of the harbor floor drew gasps. "A ghost from the past is being brought back to life," he proclaimed.

But how had the city sunk? Working with Goddio, geologist Jean-Daniel Stanley of the Smithsonian Institution's National Museum of Natural History examined dozens of drilled cores of sediment from the harbor depths. He determined that the edge of the ancient city had slid into the sea over the course of centuries due to a deadly combination of earthquakes, a tsunami and slow subsidence. Stanley also found evidence that ancient Alexandrians knew their city was sinking: Greek and Roman engineers shored up foundations of buildings and wharves along the harbor to halt the city's submergence. Alas, the added weight increased the rate at which the land sank. "They were piecemeal efforts comparable to what was done after Hurricane Katrina," says Stanley, co-author of a book on the geoarchaeology of the Nile delta that appears this year.

On August 21, in A.D. 365, the sea suddenly drained out of the harbor, ships keeled over, fish flopped in the sand. Townspeople wandered into the weirdly emptied space. Then, a massive tsunami surged into the city, flinging water and ships over the tops of Alexandria's houses, according to a contemporaneous description by Ammianus Marcellinus based on eyewitness accounts. That disaster, which may have killed 50,000 people in the city alone, ushered in a two-century period of seismic activity and rising sea levels that radically altered the Egyptian coastline. Alexandria was relatively fortunate compared with other cities in the region, particularly those situated on Nile sediment. Heraklion, Canopus and Menouthis vanished entirely.

"I realized we were in a new period—a time to rescue what we could," Jean-Yves Empereur (near the necropolis) says of Alexandria's modern building boom.

THE LECTURE CIRCUIT

EARLY CHRISTIANS threatened Alexandria's scholarly culture; they viewed pagan philosophers and learning with suspicion, if not enmity. Shortly after Christianity became the official religion of the Roman Empire, in A.D. 312, theological schools sprang up around the Mediterranean to counter pagan influence. Christian mobs played some part in the destruction of the Library of Alexandria; the exact causes and dates of assaults on the library are still hotly disputed. And

in A.D. 415, Christian monks kidnapped and tortured to death the female philosopher and mathematician Hypatia, long considered the last of the great pagan intellects. Most historians assumed that Alexandria's learned glow dimmed as the new religion gained power.

Yet now there is evidence that intellectual life in Alexandria not only continued after Hypatia's death but flourished more than a century later, apparently for Christian and pagan scholars alike. Less than a mile from the sunken remnants of the royal quarters, in the middle of Alexandria's busy, modern downtown, Polish excavators have uncovered 20 lecture halls dating to the late fifth or sixth century A.D.—

Long recognized as leaders in mathematics and astronomy, Alexandrians built one of the world's first universities (a recently discovered sixth-century lecture hall).

the first physical remains of a major center of learning in antiquity. This is not the site of the Mouseion but a later institution unknown until now.

One warm November day, Grzegorz Majcherek, of Warsaw University, directs a steam shovel that is expanding an earthen ramp into a pit. He looks more like a construction boss than an archaeologist. A stocky man in sunglasses, he is probing the only major piece of undeveloped land within the ancient city's walls. Its survival is the product of happenstance. Napoleon's troops built a fort here in 1798, which was enlarged by the British and used by Egyptian forces until the late 1950s. In the past decade, Majcherek has been uncovering Roman villas, complete with colorful mosaics, which offer the first glimpses into everyday, private life in ancient Alexandria.

As the steam shovel bites into the crumbly soil, showering the air with fine dust, Majcherek points out a row of rectangular halls. Each has a separate entrance into the street and horseshoe-shaped stone bleachers. The neat rows of rooms lie on a portico between the Greek theater and the Roman baths. Majcherek estimates that the halls, which he and his team have excavated in the past five years, were built about A.D. 500. "We believe they were used for higher education—and the level of education was very high," he says. Texts in other archives show that professors were paid with public money, and were forbidden to teach on their own except on their day off. And they also show that the Christian administration tolerated pagan philosophers—at least once Christianity was clearly dominant. "A century had passed since Hypatia, and we're in a new era," Majcherek explains, pausing to redirect the steam shovel in rudimentary Arabic. "The hegemony of the church is now uncontested."

What astonishes many historians is the complex's institutional nature. "In all the periods before," says Columbia University's Raffaella Cribiore, "teachers used whatever place they could"—their own homes, those of wealthy patrons, city halls or rooms at the public baths. The complex in Alexandria, she adds, provides the first glimpse of what would become the modern university, a place set aside solely for learning. Though similarly impressive structures may have existed in that era in Antioch, Constantinople, Beirut or Rome, they were destroyed or are yet to be discovered.

The complex may have played a role in keeping the Alexandrian tradition of learning alive. Majcherek speculates that the lecture halls drew refugees from the Athens Academy, which closed in A.D. 529, and other pagan institutions that lost their sponsors as Christianity gained adherents and patrons.

Arab forces under the new banner of Islam took control of the city a century later, and there is evidence that the halls were used after the takeover. But within a few decades, a brain drain began. Money and power shifted to the east. Welcomed in Damascus and Baghdad by the ruling caliphs, many Alexandrian scholars moved to cities where new prosperity and a reverence for the classics kept Greek learning alive. That scholarly flame, so bright for a millennium in Alexandria, burned in the East until medieval Europe began to draw on the knowledge of the ancients.

THE FUTURE OF THE PAST?

THE RECENT SPATE of finds would no doubt embarrass Hogarth, who at the end of the 19th century dug close to the lecture-hall site—just not deep enough. But mysteries remain. The site of Alexander's tomb—knowledge of which appears to have vanished in the late Roman period—is still a matter of speculation, as is the great library's exact location. Even so, ancient Alexandria's remains are perhaps being destroyed

GRZEGORZ MAJCHEREK

{ CONTINUED ON PAGE 57 }

Uncovering long-forgotten history, archaeologists put today's Alexandrians (strolling along the corniche) in touch with the city of legend, described in the 14th century as "a jewel of manifest brilliance" where "every wonder is displayed for all eyes to see."

faster than they're being discovered, because of real-estate development. Since 1997, Empereur has undertaken 12 "rescue digs," in which archaeologists are given a limited period of time to salvage what they can before the bulldozers move in for new construction. There is not enough time and money to do more, Empereur says; "It's a pity." He echoes what the Greek poet Constantine Cafavy wrote nearly a century ago: "Say goodbye to her, to the Alexandria you are losing."

Passing a new gaudy high-rise, Empereur cannot conceal his disdain. Empereur says that the developer, fearful that striking archaeological treasures would delay construction, used his political connections to avoid salvage excavations. "That place had not been built on since antiquity. It may have been the site of one of the world's largest gymnasiums." Such a building was not just a sports complex but also a meeting place for philosophizing and intellectual pursuits.

For two years, Empereur examined an extensive necropolis, or burial ground, but the ancient catacombs were demolished to make way for a thoroughfare. He wishes that the ruins had been preserved, if only as a tourist attraction, with admission fees supporting the research work.

Like archaeologists of old, today's visitors to Egypt typically ignore Alexandria in favor of the pyramids of Giza and the temples of Luxor. But Empereur is seeking funding for his cistern museum, while the head of Egypt's Supreme Council of Antiquities envisions a series of transparent underwater tunnels in Alexandria's harbor to show off the sunken city. The dusty Greco-Roman Museum is getting a much-needed overhaul, and a museum to display early mosaics is in the works. A sparkling new library and spruced-up parks give parts of the city a prosperous air.

Yet even on a sunny day along the curving seaside corniche, there is a melancholy atmosphere. Through wars, earthquakes, a tsunami, depressions and revolutions, Alexandria remakes herself but can't quite shake her past. Cafavy imagined exquisite ancient music echoing down Alexandria's streets and wrote: "This city will always pursue you."

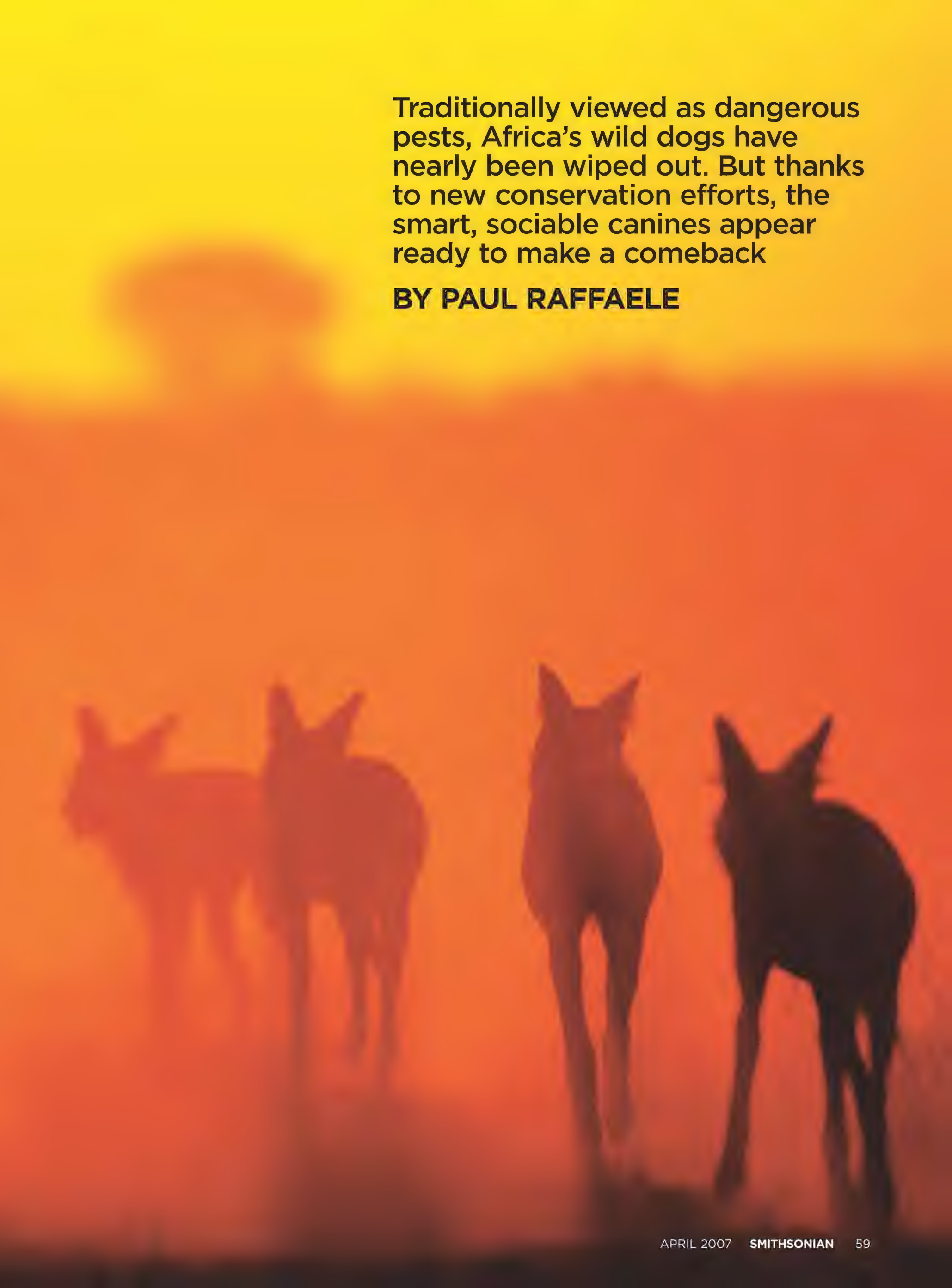
HERVE CHAMPOLLION / AKG IMAGES

To read an interview with Andrew Lawler, visit Smithsonian.com.

CURSE OF THE DEVIL'S DOGS

Traditionally viewed as dangerous pests, Africa's wild dogs have nearly been wiped out. But thanks to new conservation efforts, the smart, sociable canines appear ready to make a comeback

BY PAUL RAFFAELE



SBONISO BLESSING ZWANE, a wildlife biology research assistant, drives me along bumpy dirt trails through the rugged hills of Hluhluwe-iMfolozi Park in South Africa. Rhino mothers and their calves graze alongside zebras; wildebeests, elephants and giraffes mingle on the grasslands; and grizzled Cape buffaloes block the trail, glaring at us before ambling off in their own sweet time. The park, in the KwaZulu-Natal province of South Africa, was once the heartland of the Zulu kingdom and has some of the greatest concentrations of wildlife in Africa. But we pass the animals here with barely a glance. We're on the trail of one of the continent's most endangered carnivores—the wild dog.

Members of the canid family, which includes jackals, wolves and domestic dogs, the wild dog is a distinct species, *Lycaon pictus*, or "painted wolf." Wild dogs once roamed most of sub-Saharan Africa by the hundreds of thousands, but today there are fewer than 5,000. They're victims of habitat loss, which has both reduced their food supply and put them increasingly at odds with lions and hyenas, their natural enemies. Moreover, people have long slaughtered wild dogs, partly because the animals have been known to attack livestock but also, apparently, because of their fearsome reputation; they kill prey with such bloody ruthlessness that some farmers, I'm told, still refer to the animal as "the Devil's dog." Today wild dogs inhabit less than 50 protected national parks and private game reserves in southern and eastern Africa, where the roughly three million-year-old species is making what amounts to a last stand.

"Wild dogs are much better hunters than even lions and leopards," says Zwane, a Zulu who assists on a wild dog research project run by the Smithsonian Institution's National Zoo, as we bounce along in Hluhluwe-iMfolozi's late afternoon sun. "Once they target prey, it rarely escapes." The claim is arguable—cheetahs, lions, leopards and hyenas are also superb hunters—but, as if to prove Zwane right, a herd of about 30 impala, led by a big buck, dashes past us heading for thick bush, their eyes wide. He beams. Moments later, two of the most extraordinary creatures I have ever seen run by in pursuit of the impalas. They resemble wiry, muscular dogs, but have long, slender, supermodel legs; broad heads and massive jaws; bushy white-tipped tails; and comical Mickey Mouse-shaped ears. Their sinuous bodies are splashed with dark brown, gold, white and black splotches, like camouflage suits.

The wild dogs seem to be merely loping along, even as they match the impalas' blazing speed. We drive behind along the trail, occasionally glimpsing the impalas and the wild dogs through the scrub. A few minutes later we hear a squeal from the bushes, and then silence.

THEY ARE RUTHLESS KILLERS, it is true. Depending on the terrain, they can be twice as successful as lions, getting up to three out of four of the prey they target. And though wild dogs weigh just 50 to 70 pounds, their prey averages 110 pounds and, in the case of a kudu bull (a type of antelope), can weigh up to 500 pounds. Living in groups of 2 to 30 animals, with home territories as large as 770 square miles, wild dogs

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PAUL RAFFAELE's *story on the Korubo people of the Amazon was selected for 2006's* Best American Science and Nature Writing.

MIKE REAGAN; PP. 58, 59 DARYL BALFOUR / NHPA; P. 61 ADRIAN BAILEY / AURORA PHOTOS

"The dogs dragged their wounded pack member away and looked after it for three months," Rasmussen says.

hunt in packs, adapting their tactics to the environment.

In the Serengeti, says Micaela Szykman Gunther, a behavioral ecologist at Humboldt State University, in California, "a pack chases a prey for a long time across the open savanna, with dogs that tire falling back and their places taken by other dogs. They exhaust the prey." But in the thick bushland of Hluhluwe-iMfolozi, wild dogs tend to catch their prey by surprise. "I once saw a pack of 17 wild dogs flush out a big male nyala [an antelope] onto the road and surround him," Gunther recalls. "They kept darting in, tiring him as he tried to spear them with his horns. They pulled him down and tore into him in seconds." Wild dogs have been known to even disembowel prey while it is still on the run.

Wild dog populations are faring well in South Africa's KwaZulu-Natal province, on land that was once the domain of Zulu kings. The canines are hard to track (Penny Spiering searches for signals from radio-collared wild dogs) because a pack's territory can cover 700 square miles.

It's that sort of behavior that has earned them such enmity. In 1914, British big game hunter R.C.F. Maugham wrote: "Let us consider for a moment that abomination—that blot upon the many interesting wild things—the murderous Wild Dog. It will be an excellent day for African game and its preservation when means can be devised for its complete extermination."

Gunther bristles at the sentiment. "Somehow, the way a big cat like a lion or leopard usually kills—by strangulation that can take many minutes—was seen as more noble than the wild dogs' swift but gruesome kill," she says. "Which is more cruel?"

GREG RASMUSSEN says he dislikes the term "wild dog" because it reinforces the animal's nasty reputation. He prefers "painted dog," and indeed, among canid experts, Rasmussen is "Mr. Painted Dog." His base is at Zimbabwe's Hwange National Park, in northern Matabeleland, about 120 miles from spectacular Victoria Falls. Hwange spreads across 5,650 square miles, 90 percent of it Kalahari sand. At the northeastern edge of the park, a huddle of bungalows houses Painted Dog Conservation (PDC), a program set up by Rasmussen in 2002. There are about 150 wild dogs in the park, and Rasmussen has studied them in their natural habitat for two decades.

At the center, I settle into a chalet-style room with a view of a water hole, a draw for wild animals because of a persistent drought. More than 100 elephants troop in to slurp up water and spray themselves with cooling mud just a few yards from where I sit in the darkness. A leopard slinks across the flat dry pan toward the hole, causing several sable antelope, led by a male with huge curving horns, to skitter away. But I see no wild dogs. They get much of their fluids from the blood of prey.

Rasmussen, stocky and 50 years old, was born in London and came to Zimbabwe (then Rhodesia) with his mother and father, a schoolteacher at a private academy, when he was 11. "I loved animals and found myself in heaven," he says. In 1988, an American wild dog researcher, Joshua Ginsberg, offered him a job observing the animals in Hwange National Park because, Ginsberg recalls, Rasmussen "obviously enjoyed being out in the bush for months at a time observing wild animals, and I needed someone like that to follow the wild dogs."

Rasmussen started to live with a pack, following the wild dogs around the national park in his SUV and sleeping near them. "Their hunts usually start when the temperature is cool," he says. "By 9 a.m., it's too hot to hunt,

PAUL RAFFAELE

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Among the best hunters in Africa, wild dogs (one chasing a young wildebeest in Kenya) have a higher kill rate than lions and can take down antelope that weigh as much as 500 pounds. They are notorious for a grisly efficiency that has made some people fear and hate them, if not shoot them on sight.

J & A SCOTT / NHPA

and so the dogs lie up all day, sleeping together in a great heap." Often they hunt by the light of the moon. "They're very successful in the moonlight, and get more kudu than other prey on these hunts."

What attracted Rasmussen to the wild dogs and kept him going through the lonely days and nights out in the bush was what he calls their "perfect social harmony." They rarely fight among themselves, Rasmussen says, and "the pack members daily reinforce their bonding by elaborate greeting rituals, with leaps, tail wagging, squeals, twittering and face licking—when they wake up, just before they hunt and when they come back from a kill." As Gunther says, "The wild dog is one of the most intensely social animals we know. The pack is always living, playing, walking, running, hunting and feeding together."

Rasmussen remembers once seeing a wild dog get swatted by a lion, opening a deep gash around its neck. The wound was so bad that a veterinarian Rasmussen consulted recommended putting the animal down. "The pack knew better than the vet," Rasmussen says with a smile. "The dogs dragged their wounded member away and looked after it for three months. They appointed one of the dogs I called Circus to act like a medic, constantly licking the wound and making sure the injured dog got food after the pack returned from a kill. Three months later I saw the injured dog, its neck now healed, back in the pack and taking part in the hunt." Later, Rasmussen observed a dog he called Doc seemingly deputized to be the pack's medic. Doc fed and tended five injured dogs, Rasmussen says, feeding them by regurgitating food, something wild dogs can do at will.

Rasmussen found that the animals' social organization is so complete that each pack member was allotted a task suited to its skills. A dog he named Magellan proved almost useless in the hunt, and was once seen running after a rabbit while the other wild dogs tore after a kudu. But Magellan soon took on another role—babysitter. "He stood guard over the pups while the others were away at a hunt," Rasmussen says, "alerting them of any danger so they could quickly shoot down into the protection of the den."

Wild dog litters can number up to 20 pups—one of the largest litters of carnivores—and the pups stay in and around their underground den for about three months before they begin to run with the pack. Usually only the dominant pair of dogs in each pack breeds, the alpha male and alpha female, and they mate for life. (Beta females sometimes also have pups.) "The other dogs are incredibly loyal

Have wild dogs gotten a bum rap? Only recently have researchers begun to fully appreciate the animals' intelligence, complexity—and tenderness (in Botswana, an adult feeds pups by regurgitating). As one expert says, the wild dog is "one of the most intensely social animals we know."

ADRIAN BAILEY / AURORA PHOTOS

to the puppies and join in to raise them," says Rasmussen. Unlike lions and hyenas, they allow their young to feed first after a kill, even before the dominant pair.

Because the animals are hard to track, moving up to 20 miles a day, Rasmussen began following them in an ultralight. One morning two years ago, he took off at sunrise and was not long in the air before the right wing dipped, the tail lifted and the plane plunged to the rocks. With his legs badly smashed, Rasmussen dragged himself to a nearby thorn tree. A pair of vultures circled and landed nearby. (He cheered up a bit when they flew away.) He dragged himself back under the wrecked fuselage for protection from the boiling sun. "At sunset my heart sunk, knowing there was no chance of being rescued at least until the next day." At night his throat tightened when he heard a soft "ooogh, ooogh"—a lioness calling to a lion. He banged hard on the windshield and started whacking an aluminum strut, frightening the animals away. He scared off a prowling hyena the same way.

Another day passed without food and water. The end was near, he thought, and as he reviewed his life he concluded that the most rewarding moments had been among the wild dogs in the bush. Then he heard the drone of a plane. Its pilot noticed bits of wreckage that Rasmussen had distributed near the crash site, and sent their coordinates to a helicopter, which found him and bore him to a hospital. "Above the waist I was fine," he says, "but my pelvis had a fracture, both femurs were broken, both lower legs were broken in several places, and my ankles were damaged." Several major operations put life back into his shattered legs, now shortened two inches and as stiff as boards.

Rasmussen now runs two anti-poaching patrols manned by 17 trackers who scour the area near his headquarters in Hwange National Park. In the five years since the patrols began, the trackers have found and destroyed more than 10,000 snares, circles of wire designed to trap antelope but capable of killing or maiming wild dogs and even zebra and giraffes. He has also opened a 70-acre rehabilitation facility, which currently houses five orphaned dogs behind electrified fences. So far, Rasmussen has reintroduced four such orphaned dogs into the wild. He moved them first to Starvation Island in Lake Kariba, 300 miles to the north. (Despite its name, the island is well stocked with antelope.) For a month Rasmussen provided carcasses for the dogs. "Then, they chased and killed a female kudu," he says. "They got a taste for the hunt and had no trouble getting prey after that." Once they were ready to live on their own, Rasmussen transferred the dogs to

At night Rasmussen's throat tightened when he heard a soft "ooogh, ooogh"—a lioness calling another lion.

the mainland, where they have had to contend with lions and hyenas. It's too early to tell whether reintroduction will have a big impact on wild dog populations. But, says Rasmussen, "if it has saved dogs from one area that then survive to fight another day somewhere else, even if they may not always do as well, then it's a success."

"Wild dogs are the hardest of all the African carnivores to reintroduce because they are highly social and require enormous areas to roam, preferably in protected reserves," says Ginsberg, Rasmussen's former mentor, who is now affiliated with the Bronx Zoo and is co-author of the World Conservation Union's (IUCN) *African Wild Dog Status Survey and Conservation Action Plan*.

Of all Rasmussen's efforts on behalf of this oft-maligned beast, it seems he's most proud of the Inganyana Children's Bush Camp, "inganyana" being the local Sindebele name for wild dogs. Some 900 sixth graders each year, 50 at a time, spend four days and three nights at the rehabilitation facility, watching the dogs and learning that they are an important part of the ecosystem, helping hold other animal populations in check. They also learn that, contrary to legend, wild dogs do not normally attack people. "The kids go back to their villages and report to the chief anyone they suspect is poaching painted dogs," Rasmussen says. "Convince the local kids that they should respect painted dogs, and the battle to save them is half won."

Responding to the wild dog population crisis, conservationists have had some success breeding the animals in captivity and releasing them (Gregory Rasmussen in his Zimbabwe sanctuary with Ulaka). Encouragingly, wild dog packs, after a long absence, have returned to the Serengeti.

PAUL RAFFAELE

THERE ARE SIGNS that wild dogs are capable of making a comeback. More than 15 field projects across Africa's lower half are monitoring wild dog packs for the IUCN's Canid Specialist Group, says Claudio Sillero, who chairs the effort. And he says that although wild dogs are declining in some regions, they are becoming more numerous in others, and have even returned to the Serengeti, from which they had disappeared more than a decade ago. At Hluhluwe-iMfolozi Park, in South Africa, researchers affiliated with the Smithsonian's National Zoo say there are almost 65 wild dogs in eight packs, up from 34 dogs in four breeding packs in 2003.

Whatever the species' long-term prospects, researchers don't expect wild dog populations to rebound overnight, given what's being learned about the animals' complex social life. In most wild dog packs, all the males are related, as are all the females—but not to any of the males. When females are about 2 years old, they leave their home group and roam, looking for a group of brothers that have split off from their natal pack. "It can take months" for groups of young males and females to find each other, says Penny Spiering, a conservation biologist who directs the fieldwork for the National Zoo's project.

One glimmering dawn, Spiering and I drive along a road inside Hluhluwe-iMfolozi Park searching for wild dogs. She jams on the brakes and points ahead—there's one, in silhouette, pacing the road. She aims her binoculars and smiles. "It's Khanda, one of the dispersers. I haven't seen her in two months." Khanda is apparently searching for a new pack. Being somewhat familiar with the researchers' trucks, she trots up to us and stands by my door for a few moments. I admire her lean powerful body and keen intelligent stare. Then, with a turn of her handsome head and a flash of gleaming teeth, she trots off, vanishing in the undergrowth.

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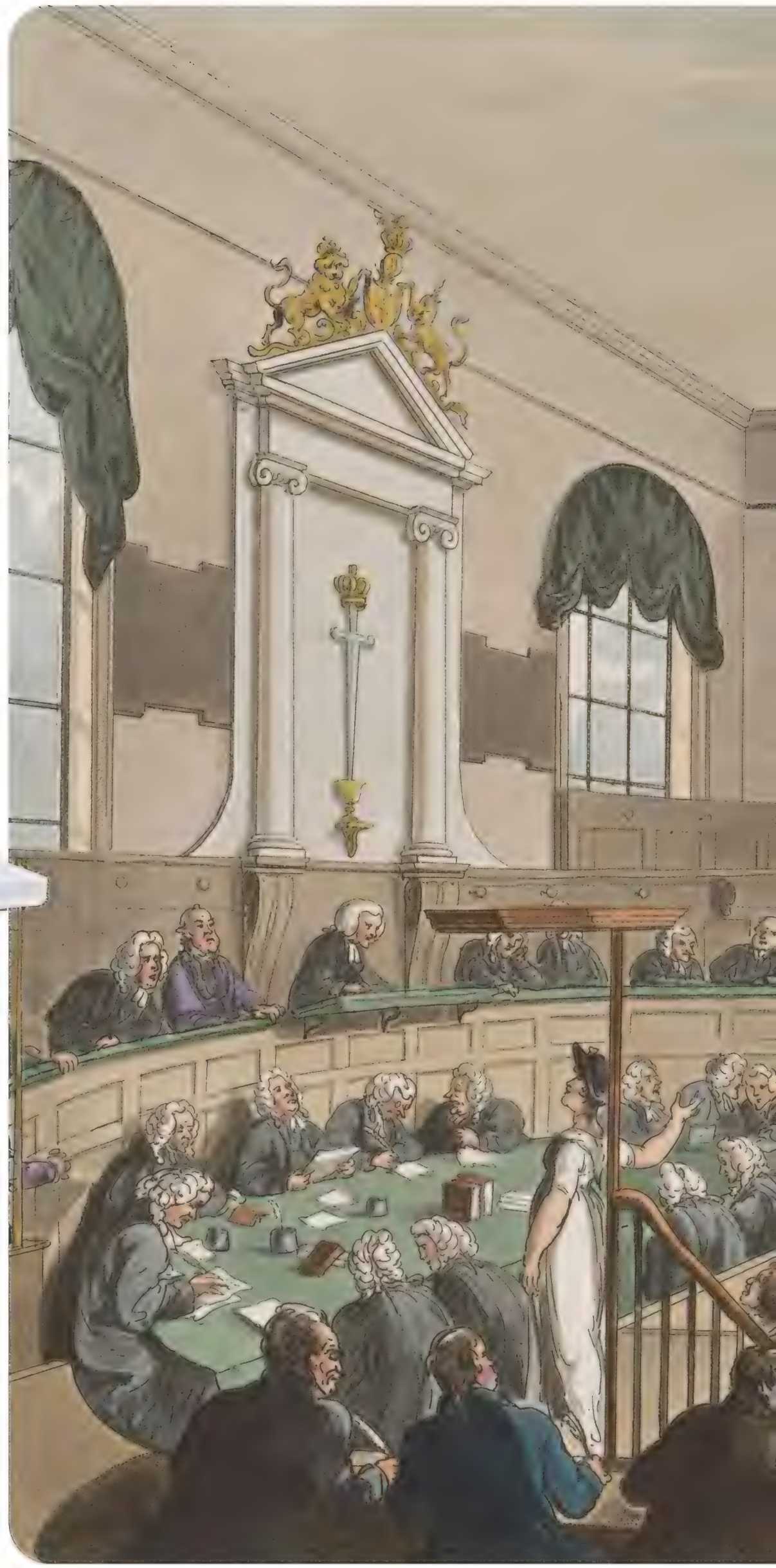
BY GUY GUGLIOTTA

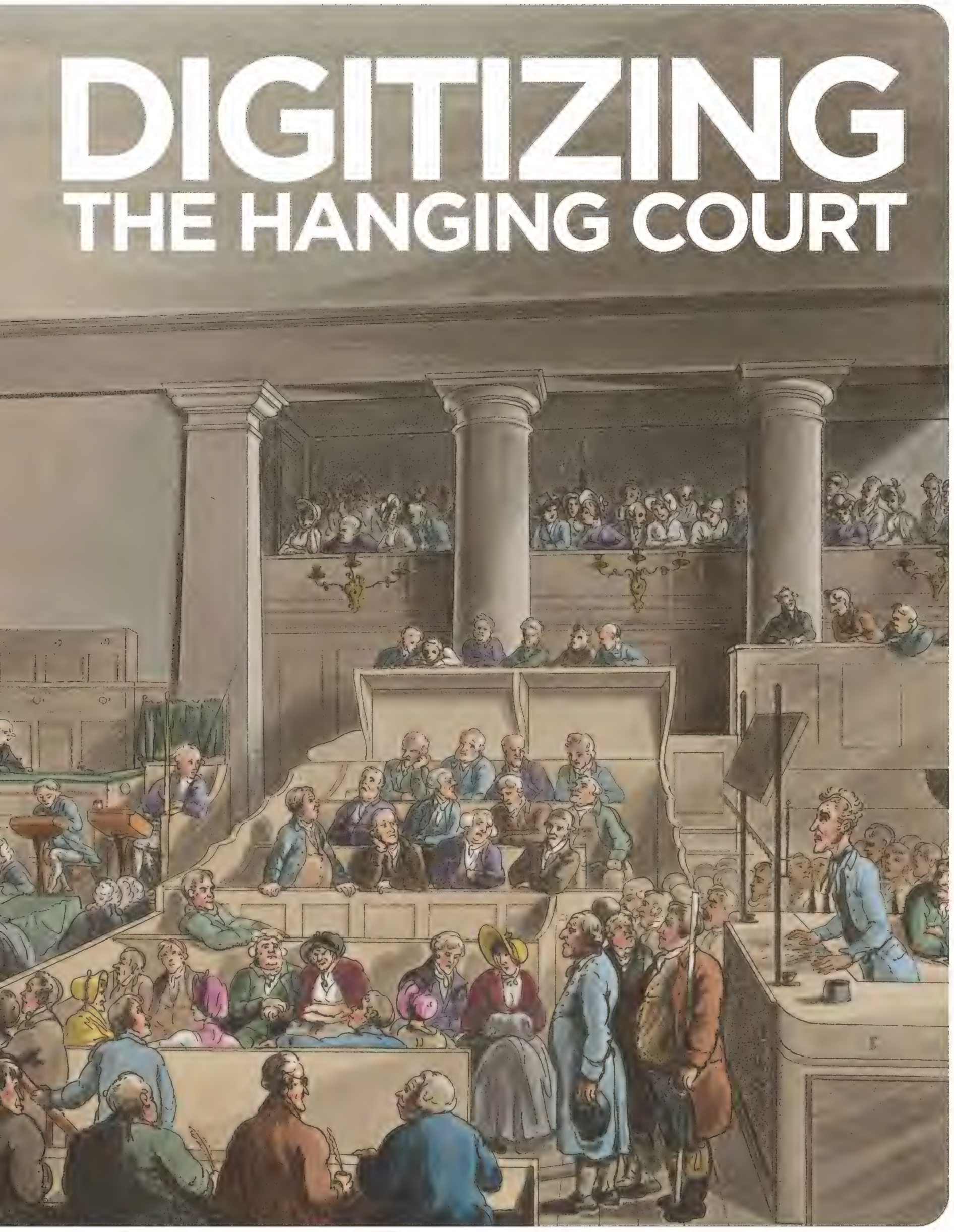


BY THE TIME the hangman finished him off, Jonathan Wild had few friends. In his own way he had been a public servant—a combination bounty hunter and prosecutor who tracked down thieves and recovered stolen property, a useful figure in 18th-century London, which had no formal police force of its own. Such men were called "thief-takers," and Wild was good at his work. But along the way, he became more problem than solution.

He called himself the "Thief-Taker General of England and Ireland," but he became London's leading crime boss, specializing in robbery and extortion. He frequently encouraged or even set up thefts and burglaries, fenced the booty for a relative pittance, then returned it to

The Old Bailey (in 1809, right, and today, on laptop) was the venue for more than 100,000 criminal trials between 1674 and 1834, including all death penalty cases.

DIGITIZING
THE HANGING COURT



its owner for the reward. If his cronies tried to double-cross him, he had them arrested, to be tried and hanged—then collected the bounty. It was said that he inspired the term "double-cross," for the two X's he put in his ledger beside the names of those who cheated him.

Daniel Defoe, a journalist as well as the author of *Robinson Crusoe*, wrote a quickie biography of Wild a month after he was hanged, in 1725. Henry Fielding, the author of *Tom Jones* and *Joseph Andrews*, satirized him in *The History of the Life of the Late Mr. Jonathan Wild the Great*. John Gay took him as his inspiration for the villainous Peachum in *The Beggar's Opera*.

But by the time *that* work had morphed into the Bertolt Brecht-Kurt Weill hit *The Threepenny Opera* two centuries later, Wild had all but faded from memory. And when Bobby Darin made a hit out of "Mack the Knife" 30 years after the play opened, Wild was largely a forgotten man.

But thanks to a pair of expatriate Americans fascinated by the way England's other half lived during the Age of Enlightenment, anyone with a computer can now resurrect Jonathan Wild and his dark world. The original record of his trial is in the *Proceedings of the Old Bailey*, the digest that described and often transcribed the more than 100,000 trials that took place in the criminal court of the City of London and the County of Middlesex between 1674 and 1834. Working with grants totaling some $1.26 million, historians Robert Shoemaker of the University of Sheffield and Tim Hitchcock of the University of Hertfordshire have digitized the 52 million words of the *Proceedings*—and put them in a searchable database for anyone to read on the Internet.

Built in 1539 next to Newgate Prison, the justice hall was nicknamed after its address on Old Bailey Street, where London's "bailey," or wall, once marked the city's Roman boundaries. The court tried felony cases—which

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GUY GUGLIOTTA, *a former reporter for the* Washington Post*, makes his* SMITHSONIAN *debut with this article.*

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included any case that carried the death penalty—and in a city where criminals' biographies and elaborate ballads routinely chronicled the exploits of famous malefactors, the *Proceedings* were a tabloid-style sensation.

The *Proceedings*' first issues were thin, cheap and focused on sex and violence, but as time passed, they became more comprehensive and formal, eventually acquiring the stature of an official record; Shoemaker and Hitchcock call them "the largest body of texts dealing with non-elite people ever published." Non-elite indeed! The court records document a tough, teeming London just beginning to flex its muscles as the commercial center of the Western world. The *Proceedings* made a profit virtually from the first pamphlet issued and thrived for decades afterward. It's easy to see why.

Take the case of 19-year-old Elizabeth Canning, who vanished in 1753, only to stumble home a month later dressed in rags, half-starved and bleeding from the head. She said she'd been robbed and kidnapped by gypsies and held in a hayloft at a rural brothel for 27 days after refusing to become a prostitute. "There was a black pitcher not quite full of water, and about 24 pieces of bread" in the loft, she testified in a case that riveted the public for months. She claimed to have subsisted on these meager rations until she escaped by tugging a plank from a boarded-up window and dropping about ten feet to the ground, cutting her ear in the process.

Mary Squires, the accused ringleader in the crime, maintained that she had never laid eyes on Canning before the trial, but was convicted of robbery—a more serious charge than kidnapping at the time—and sentenced to death anyway.

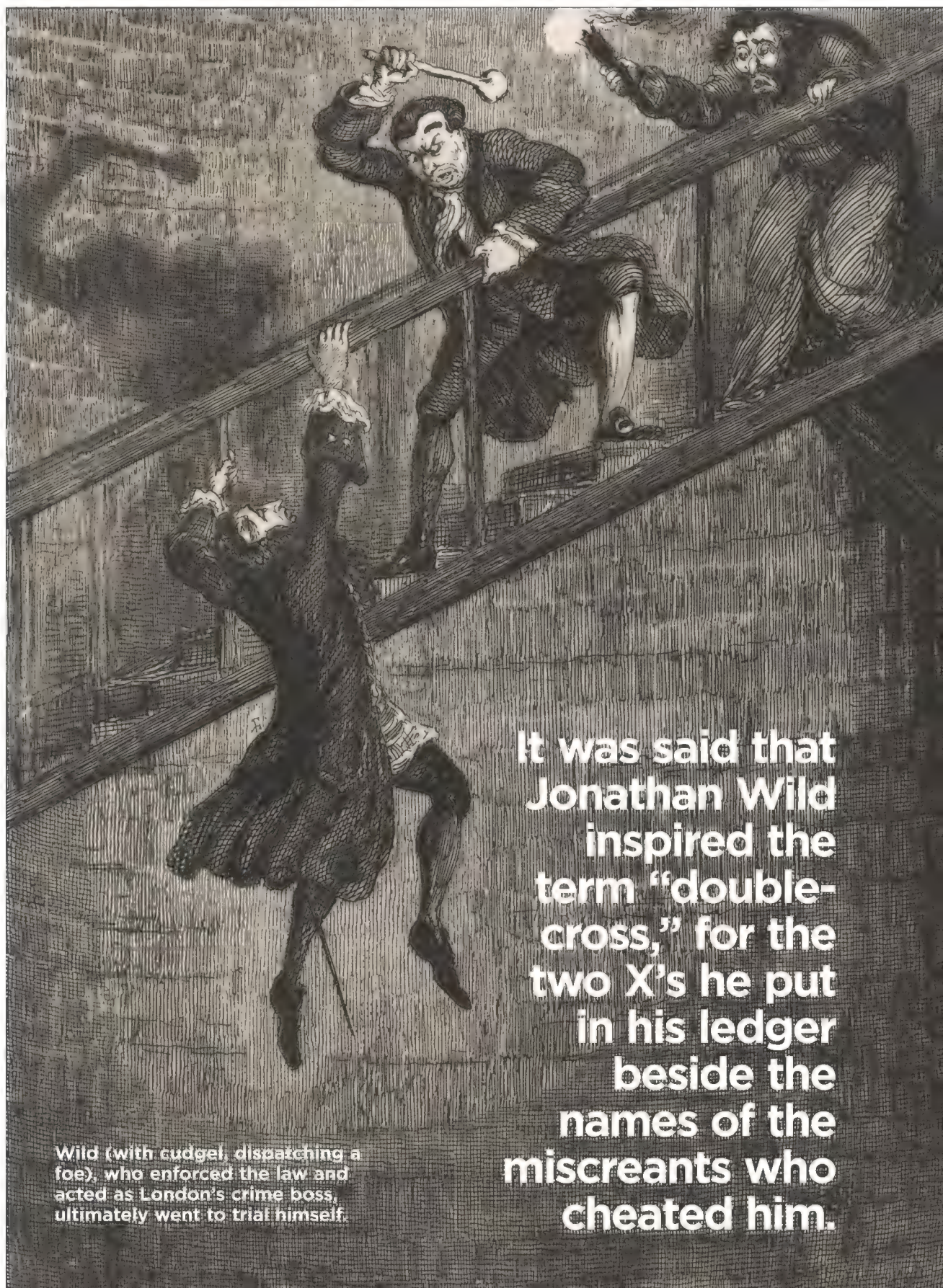
It then became clear that Canning's story had serious holes. Besides the implausibility of her prolonged survival on so little food, evidence revealed that neither Squires nor her accused accomplices were anywhere near the farmhouse at the time of Canning's purported kidnapping. Investigators visited the loft and said it bore little resemblance to the room Canning had described, and tenants there testified that they had been in residence during the time Canning said she had been locked up. The loft indeed had a small window, but it also had a second, much larger, unboarded one that offered easy access to the yard four—not ten—feet below.

In a second trial, Canning was convicted of perjury and "transported" to the American Colonies. There, she married the great-nephew of a former governor of Connecticut, bore five children and died in 1773, before she turned 40. (No one ever discovered what had really happened to her during her disappearance.) Squires was pardoned and released.

The stories in the *Proceedings* evoke the mean streets of Moll Flanders, the waterfront of Jim Hawkins, Black Dog and Long John Silver and the dank alleyways where Fagin and the Artful Dodger ran gangs of "blackguard" orphan cutpurses.

In 1741, for example, highwayman John Car was sentenced to death after mugging a man in a park for four shillings and shooting him in the eye. Passersby ran Car down, and when one of his pursuers asked why he had done it, the thief offered an explanation worthy of Dickens: "Money, if you had been here, I would have served you the same."

In 1761, Thomas Daniels was convicted of murder for throwing his



Wild (with cudgel, dispatching a foe), who enforced the law and acted as London's crime boss, ultimately went to trial himself.

It was said that Jonathan Wild inspired the term "double-cross," for the two X's he put in his ledger beside the names of the miscreants who cheated him.

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naked wife, Sarah, out of a third-story window one August night after returning from a pub. But he won a pardon after documenting his spouse's vicious temper and claiming that, on the night in question, she whacked him over the head with an unidentified object, then ran to the window and "flew out."

The *Proceedings* have long served as primary source material about daily life in 18th-century London, but their riches were laid bare only to those dogged enough to leaf through hard copies in the bowels of research libraries or, since 1980, to squint for hours at microfilm. "I read them page by page," says University of Toronto emeritus historian John Beattie. He began in the 1980s, researching *Crime and the Courts in England 1660-1800*, and finished in the '90s, while writing *Policing and Punishment in London 1660-1750*.

But by transforming the *Proceedings* into Oldbaileyonline.org, Shoemaker and Hitchcock have brought them to the laptop of Everyman and demonstrated how computer science can make the past come alive.

It is now possible to place software "tags" in large bodies of digitized data, allowing researchers to find something simply by asking the computer to retrieve it. Such high-speed searches have been used not only to sort archives but also to search telephone records, catalog fingerprints or accomplish virtually any other task requiring navigation of immense masses of data. But it wasn't that way when Shoemaker and Hitchcock began their careers in the late 1980s.

"When I interviewed for my first lectureship, they asked me if I could teach 'computing in history,'" says Hitchcock. "I said 'yes' because I wanted the job, even though it wasn't true. On the computers of that time they had developed programs that allowed you to flit from page to page. You could see the potential, but not the mechanism."

HITCHCOCK, who is from San Francisco, and Shoemaker, who grew up in Oregon, met in 1982 as doctoral candidates in the Greater London Record Office in the basement of County Hall. Both were interested in what Hitchcock calls "history from below"—he was writing a dissertation on English workhouses in the 18th century, and Shoemaker was studying the prosecution of petty crime in the Greater London area during the same period. The two helped edit a book of essays published in 1992, then developed a tutorial on 18th-century English towns on CD-ROM in the mid-1990s. Within a few years, the Internet had provided the "mechanism" Hitchcock needed. "The Old Bailey proceedings seemed a natural," he says.

The pair conceived the idea of digitizing them early in 1999, then spent a year doing background research and writing grant proposals. They got $510,000 from the Arts and Humanities Research Council, the British equivalent of the National Endowment for the Humanities, and $680,000 from the New Opportunities Fund, established for "digitization of learning materials." The universities of Sheffield and Hertfordshire contributed staff, equipment and space.

"It was an enormous amount of money, and we were lucky," Shoemaker

A woman was sentenced to death on the testimony of Elizabeth Canning (on the witness stand)—until serious holes were found in her story. Convicted of perjury, Canning was sentenced to being "transported" to the American Colonies.

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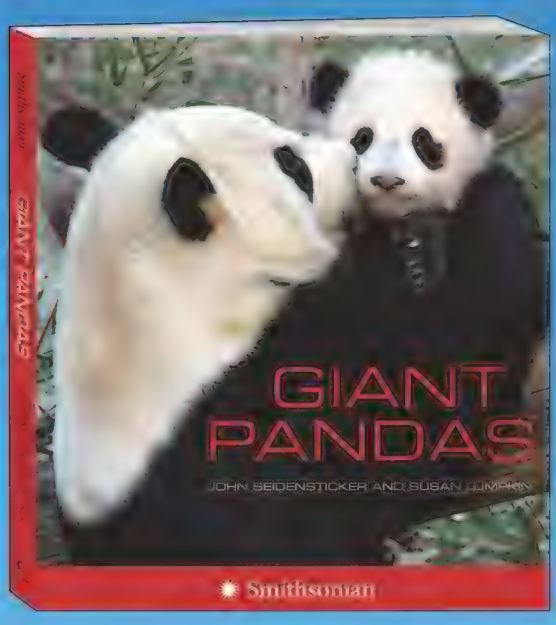

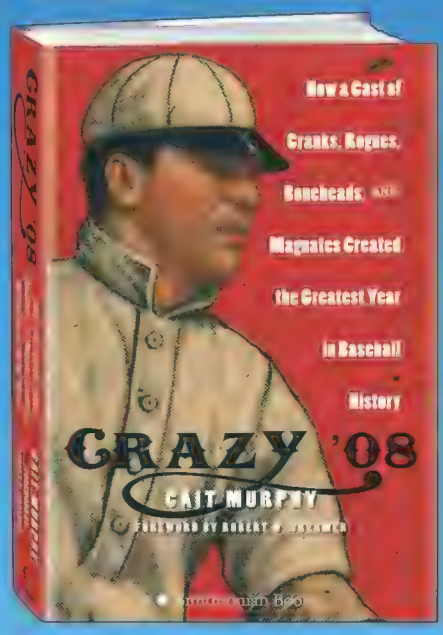

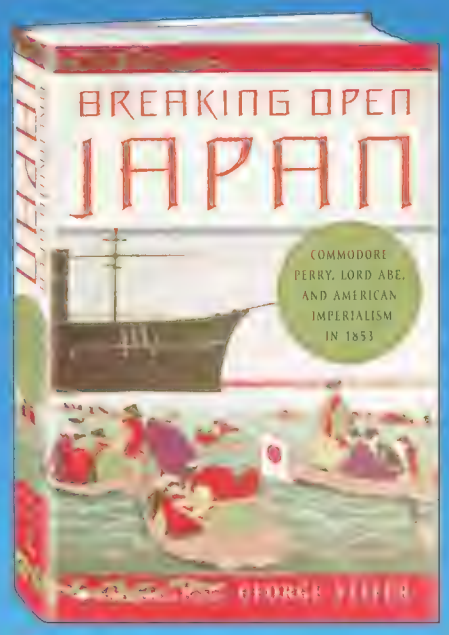

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says. They enlisted Sheffield's Humanities Research Institute to customize software for searching the *Proceedings*, but first they needed a digitized copy of the text.

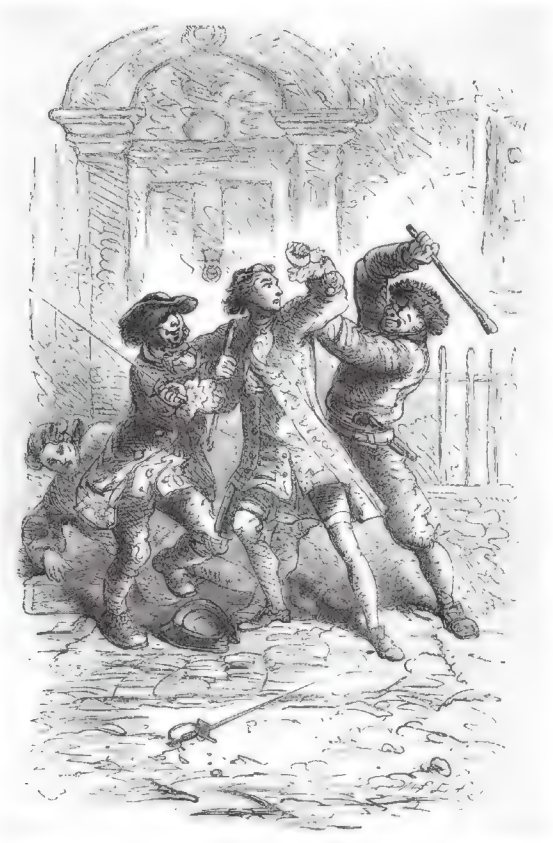
There was no easy way to get one. Technology in 2000 wasn't sufficiently sophisticated to scan words off microfilm; even if it had been, the vagaries of 18th-century printed text, rife with broken fonts and ink "bleed-throughs" from the other side of the page, would have made the technique impossible to use.

So the researchers hired someone to take digital photographs of all 60,000 microfilm pages, then sent the images on CD-ROMs to India. There, in a process known as double re-keying, two teams of typists typed the entire manuscript independently, then fed the copies into a computer that highlighted discrepancies, which had to be corrected manually. That took two years and cost nearly half a million dollars. Then Shoemaker and Hitchcock assembled a team of researchers to embed the entire manuscript with over 80 different computer "tags," permitting searches by such categories as first name, surname, age, occupation, crime, crime location, verdict and punishment.

The *Proceedings* went on-line in stages between 2003 and 2005. The Sheffield techs refine and update the software continually, recently adding links to maps to help people locate crime scenes more effectively. Their next task is to link stolen objects mentioned in the *Proceedings* to images of them in the Museum of London.

Meanwhile, the team has obtained enough new grant money to digitize the proceedings of the Old Bailey's successor, the Central Criminal Court, whose 100,000 trial records begin in 1834 and go to 1913. These should come on-line in 2008. The two also plan to digitize an additional 30 million words of 18th-century records—among them, the records of the carpenters' guild, Bridewell Prison and the insane asylum known as Bedlam—to be integrated into the original project. "It will allow us to trace people through the system," says Hitchcock, "to create a kind of collective biography of working people in 18th-century London."

With Oldbaileyonline.org, the haystack now readily surrenders its needles. Genealogists routinely search it to trace family histories. One scholar searched it for information on the court's treatment of "idiots"—people with cognitive disabilities. A few strokes on the keyboard can yield statistics for burglary (4,754 cases in the database), murder (1,573), arson (90), forgery (1,067) and other crimes, or produce a map where crimes were committed. *Oxford English Dictionary* etymologists found that the expression "No way"—thought to have emanated from the University of South Dakota in the 1960s—seems to have arisen during an Old Bailey rape case in 1787.



The stories in the Proceedings evoke the mean streets of Moll Flanders and the misadventures of Tom Jones (under attack, above). At the time, London had no formal police; residents were legally bound to heed others' cries for help.

Crime became more violent. New ways of enforcing the law were needed. Among the innovators was the novelist Henry Fielding.

Oldbaileyonline.org "broadens the perspective," says the University of Oregon's Randall McGowen, who is writing a history of 18th-century forgery. "You can find out that forgers were overwhelmingly male." (Most were clerks with a weakness for gambling or women and the ability to mimic the boss's handwriting in a "note of hand," the IOU's that the wealthy passed around to obtain funds.)

Traditionalists note that technology of any kind—from microfilm to the Internet—adds "distance" to scholarship, not necessarily a good thing. Though the University of Toronto's Beattie finds the Internet "indispensable" for his current research, he says, "it's a pleasure to pick up a letter actually written by Henry Fielding, and I've taken the string off bundles of documents that still had the 18th-century dirt on them."

THE LONDON described by the *Proceedings* was the hub of a nation that catapulted into the front rank of world powers in the 18th century. The city's population, almost 600,000 in 1700, grew to more than a million by 1800, and the economy exploded.

With no formal police force, Londoners at the dawn of the century had to protect themselves. Neighborhoods appointed householders as "constables" who had the authority to arrest evildoers or summon assistance. Citizens were required by law to heed the "hue and cry" of "Help!" or "Stop, thief!" and run the criminal to ground, as they did in the case of John Car.

With such rudimentary policing, the government focused on deterrence, and under the so-called "Bloody Code," a succession of laws enacted through the mid-18th century, more than 200 offenses carried the death penalty. These included not only violent crimes, but also everything from forgery to shoplifting and pickpocketing.

"Execution was used to scare people by example," Shoemaker says, but

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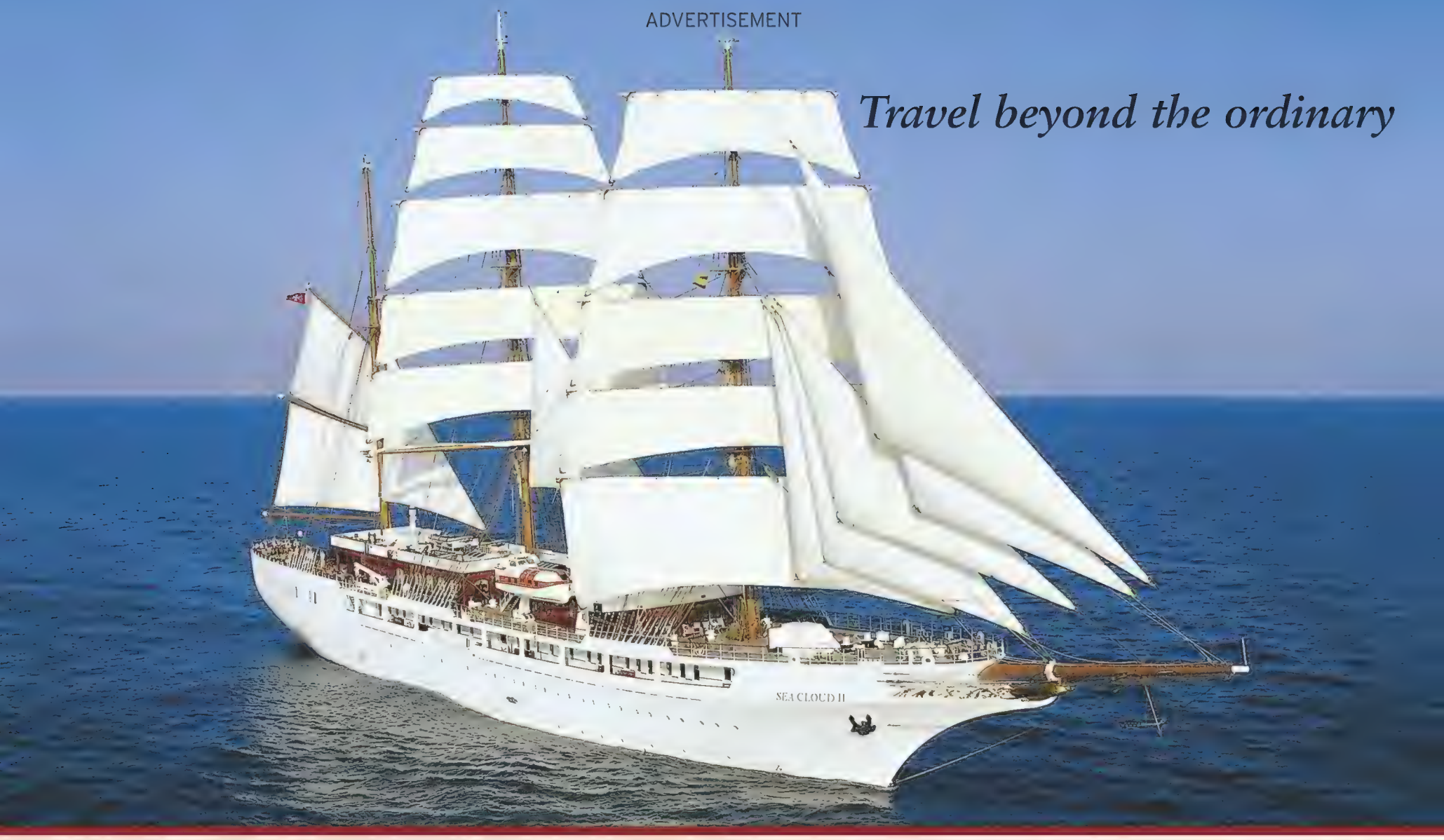

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since neither the authorities nor the public wanted to hang people for relatively insignificant crimes, only about a third of death sentences were actually carried out during the 18th century, and public enthusiasm for hangings waned as the century progressed.

"Nobody wanted a blood bath," Shoemaker says. Instead, many capital offenders were branded and some were pardoned, while others were "transported" to the North American Colonies, and, later, to Australia. Imprisonment became a more frequent alternative only in the 1770s, when the American Revolution disrupted transportation.

Even with the Bloody Code, there was no formal system of investigation or prosecution, so the government began offering large bounties for conviction of those guilty of serious offenses. London attracted young working people, who were busy in boom times but idle and often dangerous during busts. Wars were fought serially, and each treaty brought a wave of demobilized soldiers whose most marketable talent was skill with weapons.

Crime became more violent, and new methods of law enforcement were needed. One of the innovators was Henry Fielding, who, with his half-brother John, served as a mid-century magistrate at Bow Street, near Covent Garden. The Fieldings induced the government in 1753 to fund the Bow Street Runners, a corps of ex-constables, to track down miscreants and bring them to justice. "They were real detectives going after criminal gangs," says Beattie, who is writing a history of the runners.

And they supplanted the thief-takers, who, thanks to Jonathan Wild and others, had become hopelessly corrupt holdovers from simpler times.

THE CRIME that undid Wild, which began January 22, 1725, was modest enough. Irish immigrant Henry Kelly testified that he and his friend Margaret Murphy had been drinking gin at Wild's house when Wild suggested the two rob a shop run by a blind lacemaker. "I'll go along with ye, and shew ye the door," he told them.

Wild waited outside while Kelly and Murphy went in. Shopkeeper Katharine Stetham later testified that the pair were "so very difficult" that none of her samples "would please them." She went upstairs and found others more to their liking. But "we could not agree about the price," Stetham testified, so Kelly and Murphy left. A half-hour later, Stetham "miss'd a tin box of lace."

After leaving the shop, Kelly and Murphy met back up with Wild. Kelly later testified that Wild offered to pay them on the spot "three guineas and four broad pieces" (a bit over seven pounds—a year's wages for a housemaid) for the box of lace, or they could hold out for the possibility of getting more if Stetham offered a reward. Kelly said they took the cash.

Stetham, not surprisingly, turned to Wild for help. She advertised a reward of 15 guineas and, according to her testimony, told Wild privately that she would give 20 or 25.

Wild, presenting himself as an honest officer of the law, accepted only ten guineas from Stetham—ostensibly to pay off an intermediary—and, in due course, produced the missing lace. "Not a farthing for me," he told her, according to her testimony. "I don't do these things for worldly interest, but only for the good of poor people."

But Kelly and Murphy told a different story, one the jurors found persuasive, at least in part. They acquitted Wild of theft, but convicted him of an offense that would come to be known as "Jonathan Wild's Act"—perverting justice by accepting a reward without attempting to prosecute the thief.

Wild was hanged at Tyburn on May 24, 1725. The route from Newgate to the gallows was lined with cheering crowds "who called furiously upon the hangman to dispatch him," Daniel Defoe wrote. The *Proceedings* summed up the case with typical economy: "The jury acquitted the prisoner of the first indictment [theft] and found him guilty of the other. Death."

Many of the death sentences meted out under the "Bloody Code" were never carried out—partly because public enthusiasm for hangings waned—but the gallows at Tyburn remained the feared last stop in London's justice system.

"Execution was used to scare people by example," Shoemaker says. Yet "nobody wanted a blood bath."

NORTH WIND PICTURE ARCHIVES

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Z

THE UNI WAY

Though they embrace computers and TV, the secret of the tribe's unity lies in fealty to their past

BY VIRGINIA MORELL

PHOTOGRAPHS BY SCOTT S. WARREN

TWO BRIDESMAIDS are helping Deidre Wyaco, a Zuni Indian, dress for her big day. She dons her tribe's traditional wedding costume—white moccasins and deer-hide leggings wound from ankle to knee; a black wool tunic layered over a white blouse; and four saucer-size turquoise-and-silver brooches pinned down the length of her skirt.

The bride's sister, Darlynn Panteah, fastens a turquoise-and-silver squash blossom necklace around Wyaco's neck and adorns her with so many turquoise rings and bracelets that her hands look as if they'd been dipped in blue-green water. Wyaco's niece Michella combs her jet-black hair into a tight bun and smoothes each lock in place while a cousin places a scarf over her shoulders and fixes it with a turquoise-and-silver pin. Then everyone stands back to admire Wyaco, her dress as stark and eye-popping as the red-earth, blue-sky landscape of their home, Zuni Pueblo, on the Zuni Indian Reservation, 40-odd miles south of Gallup, New Mexico.

Zuni Pueblo has witnessed such wedding scenes for millennia. For most Zuni, who call themselves A:shiwi (the origins of "Zuni" are unknown), it would be almost impossible to imagine getting married any place other than here at Halona Idiwan'a, the Middle Place of the World, where, in origin myths, the tribe settled after many years of wandering. The Zuni have dwelled in this broad valley of golden buttes and red mesas for thousands of years, farming, hunting, gathering and practicing their communal way of life and ceremony-rich religion.

It's that religion, the Zuni say, that binds them together. It's what enabled them to withstand the hardships of drought and famine and their conquest, in 1540, by the Spaniard Francisco Vásquez de Coronado. He had been led to Zuni by a Franciscan friar, who'd seen the pueblo settlement from a distance and claimed it was one of the Seven Cities of Cibola, mystical places said to be laden with riches. Coronado's forces quickly realized that this small pueblo

Adhering to tradition is a way of life among the Zuni Indians of northwestern New Mexico, whether it's dryland farming (left) or wedding ceremonies (above). "The Zuni's complex social web seems to hold people," says Dennis Tedlock. "Their religion and language provide . . . ethnic identity."

was not Cibola, but they plundered what they could—then claimed Zuni and 80 neighboring pueblos for Spain.

In other parts of the Americas, the Native peoples who had the misfortune to make early contact with Europeans often vanished completely. The Patuxet of New England are gone, as are the Pulacuam of Texas and the J'akaru of Peru. The Zuni, for their part, also came perilously close to disappearing: in 1879, the tribe, believed to have had as many as 4,100 members in the middle to late 1500s, numbered barely 1,700, brought low by smallpox and measles. But today, there are 10,000 Zuni, and the tribal government estimates that 90 percent of them live at Zuni Pueblo, making this tribe one of the most intact in existence. "The Zuni's complex social web seems to hold people. Their religion and language provide a point of ethnic identity," says Dennis Tedlock, an anthropologist at State University of New York at Buffalo, who has published a book on the art of the Zuni storyteller. "And their isolation has worked for them, but against them economically."

Somehow, although they've lost many of their original lands (the reservation encompasses 700 square miles) and many of their cultural and religious objects, they've managed to preserve their core beliefs, even while adding elements from beyond their borders, the world of mainstream America. And so Wyaco, the perfectly dressed Zuni bride, incorporates a few outside touches for her wedding, marching down the aisle not to the beat of a Zuni drum but

beneath a white awning decorated with white and pink paper wedding bells to a recording of "Here Comes the Bride." None of the guests—mostly Zuni, with a handful of outside *melika* (Anglos)—seemed the least surprised.

But they all also knew they were watching a special Zuni moment when Wyaco's sister pushed their paralyzed father down the aisle in his wheelchair so that he could give his daughter away to the groom, Randy Hooee.

"Everyone at Zuni has a role," said one guest, nodding in approval. "No one, no matter what, is left behind. That is—and always has been—the Zuni way."

How, in this era of the Internet, when the outside world

Despite a history of encroachment from the outside—from the conquering Spanish (above, Frederic Remington's depiction of Coronado marching across New Mexico) to seductive satellite TV—the Zuni uphold their ancestors' traditions. Acclaimed potter Milford Nahohai (below) learned the art from his mother.

with all its material goods and other temptations calls so seductively, do the Zuni manage to maintain their way of life? What is it about the Zuni way that, despite 61 percent unemployment at the pueblo and problems above the national average with drugs, alcohol and diabetes, keeps most of those 10,000 souls at Zuni Pueblo?

"It's the salt," says Randy Nahohai, a celebrated potter in his 40s, with a wink and laugh. Yet his answer is only half-facetious. "I've been outside," he continues, "and I've done a lot of traveling, but it's always good to come home to good chili, and salt that doesn't roll off your food."

Lorandina Sheche (above) carves animal fetishes at her home. "I look at the rock, see the way it's shaped, and I make it," she says. Zuni believe fetishes (right, a Sheche sheep) confer protection.

We're sitting at his living room worktable in the home he shares with his brother, Milford, also a noted potter, and their families. Like most Zuni today, the Nahohais no longer live in the multistoried adobe dwellings for which Halona, the old part of the Zuni Pueblo, was once famous. Most now favor modest adobe, stucco or mobile homes.

Nahohai hands me a small bowl of salt. "You'll see the difference," he says. The salt, which Zuni men collect on pilgrimages to their sacred Zuni Salt Lake (not to be confused with the larger one in Utah, some 600 miles to the north), has a soft, almost powdery, feel. "We've been collecting our salt at our Salt Lake for thousands of years," Nahohai says. "And that's another reason that we stay here: we're living where our ancestors lived. All these people who were here before you—it makes your head swell up with pride just to be Zuni. I try to show that pride through my work."

In a back bedroom where he and his youngest son sleep, Nahohai produces hand-built pots that he paints with abstract designs of the night sky or stylized images of leaping deer. Nahohai and his brother shape their pottery from clay they collect at a spot that has long been used by the tribe's potters. And they make their paints in the traditional way, by boiling certain plant roots until they gain a resin-like consistency, or grinding small chunks of ocher into a pliable paste. But they use an electric kiln and modern paintbrushes, instead of the old yucca-tipped ones favored by their forebears.

"I hate the taste of yucca," Nahohai says. "We learned everything about making pottery from our mother. For a long time before her, there were hardly any Zuni potters. That tradition died out with the arrival of metal pans. And then there was just too much Tupperware, so nobody made pottery."

Nahohai's mother, Josephine, who died last year, and other Zuni women revived the craft. In the process, they created one of Zuni's more important cottage industries. (Nahohai's pottery, which incorporates elements of traditional Zuni symbolism, is displayed at the National Museum of the American Indian.) The tribal council estimates that about 80 percent of all Zuni families earn at least part of their income through their arts, giving the pueblo something of the feel of an artists' colony. Inside every home, it seems, someone is bent over a workbench creating inlaid jewelry, carving an animal fetish (renderings of various animals said to possess their powers and spirit, much favored by collectors), sculpting a kachina doll (representations of spiritual beings) or making pottery. Most picked up their skill by watching their parents.

"My folks would let me help with the polishing," says Lorandina Sheche as she sits at a grinding wheel in a back bedroom of her family's home sculpting a bear that resembles those the Zuni made in the 19th century. "Then, one day, my dad went to the store for a while, so I took—well, I *stole*—one of his rocks." Sheche laughs at the memory. "I made a fetish from dad's rock, a big coyote like the ones in the anthropologist's book. My dad called it 'E.T.' and said no one would buy it. But an Albuquerque Native crafts store did. They paid me $45 for it."

From under her workbench, Sheche pulls out a copy of Frank Hamilton Cushing's monograph, *Zuñi Fetishes* (1883). I'm surprised, since Cushing, a member of a Smithsonian Institution expedition that came to study the tribe in 1879,

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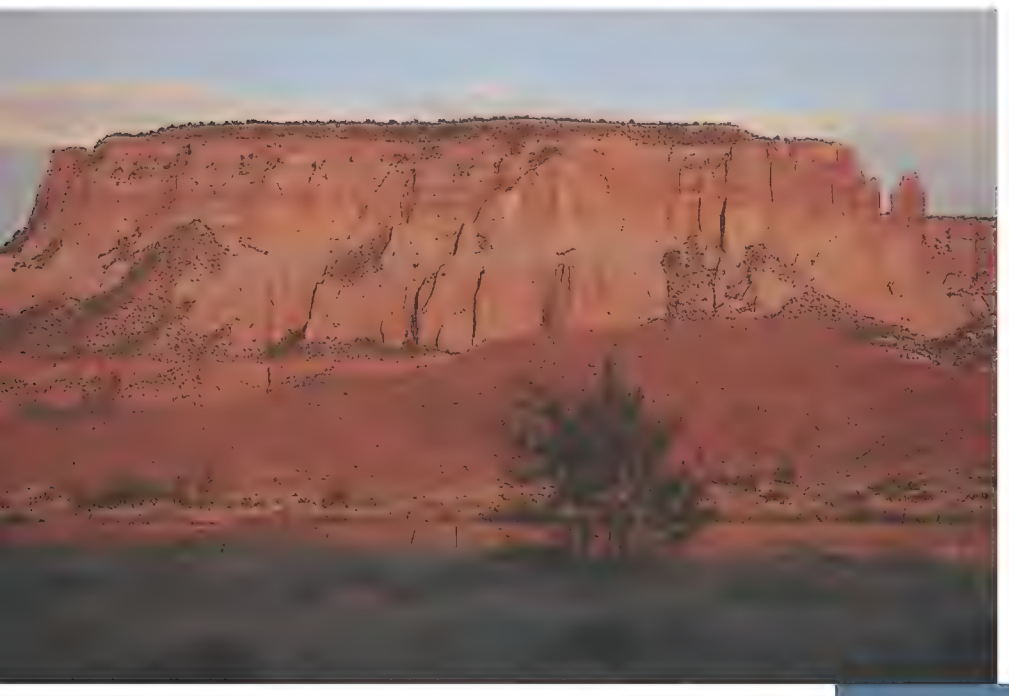
VIRGINIA MORELL *is the author of* Ancestral Passions *and* Blue Nile. *Photographer* **SCOTT S. WARREN***'s work has also appeared in* National Geographic, Outside *and* Newsweek.

CENTER (SHEEP FETISH): WWW.SUNSHINESTUDIO.COM; P. 78 TOP: GRANGER COLLECTION, NEW YORK

is held in low regard by many Zuni. Just 22 at the time, Cushing was disappointed when the expedition chose not to move into the pueblo, so, the story goes, he plunked his bedroll down in the tribal governor's house. "How long will it be before you go back to Washington?" the governor is said to have asked him. Cushing stayed four-and-a-half years, learning the Zuni language and their sacred ceremonies.

Among anthropologists, Cushing is regarded as a pioneering figure, one of the first professional ethnologists, and the original "participant observer." But to the Zuni, he is another in a long line of white betrayers. Most damaging in Zuni eyes, Cushing wrote in great detail about their religion and its sacred ceremonies, violating their trust in sharing secret knowledge.



In times of danger, the tribe has sought refuge on the sacred mesa of Dowa Yalanne (above), about three miles from Zuni Pueblo. Zuni (costumed dancers, right) consider ceremonies an expression of their religion.

"Yes, Cushing was that white man who was adopted by the tribe and became a Bow Priest," says Sheche. "And he learned many Zuni things and believed it all—but then he went home and published all our knowledge. My grandpa used to say that Cushing was a good guy and a crook."

Sheche laughs merrily, apparently unconcerned that she's drawing on such a controversial work to carve her own authentic Zuni fetishes. For Sheche, what matters is that selling fetishes—together with her husband's finely carved kachinas as well as some baby-sitting work—enables her to live at Zuni.

BY THE TIME Cushing invited himself into the pueblo, the Zuni had already suffered through years of Spanish and Mexican rule. Under the Spanish, the Catholic Church had ordered them to cease their religious practices altogether. They'd managed to protect their beliefs in part by pretending the prayer songs they sang in their cornfields were simply planting tunes and in part by outright rebellion. They resisted the inquiries of other anthropologists—and from melika in general—by adopting an icy, slightly hostile stance toward overly curious outsiders. Although I was invited to several Zuni ceremonies and dances, and was warmly greeted, I was also warned not to write about them. "This is our religion."

"People outside have the idea that knowledge should be shared," said Jim Enote, the director of the A:shiwi A:wan Museum and Heritage Center. "That's what universities are built around. But at Zuni we don't think that way. Some knowledge should be protected and *not* shared. There are things in Zuni you can know, and things you can't. And there are certain people who deserve to be the keepers of that knowledge. It's a privilege, and the rest of us respect them for that."

Those who follow the Zuni faith greet the morning sun with a sprinkling of sacred cornmeal and mark the yearly calendar with rituals and dances, all designed to keep not only Zuni but the world at large in balance and at peace. Thus "living at Zuni" means far more than simply being able to pass down artistic traditions or eat Native foods with Zuni salt. For the Nahohais and Shecheses, staying at Zuni is almost a sacred obligation. Those who assume a religious position—among the Zuni devout that translates to at least one man in every family—do so for life, and they must be present for every ceremony.

"There's one key to understanding Zuni," says Edward Wemytewa, a former tribal councilman in his early 50s, who takes me on a quick tour of Halona, where the last of the pueblo's fabled multistory buildings still stand around a ceremonial plaza. "And it's that the dances that take place here in the plaza are the heart of who we are. All the movement

Secrecy is fundamental to the Zuni religion, and tourists are prohibited from photographing or recording religious ceremonies. A photography permit allows a snapshot (above) of rainbow-costumed young dancers parading at the Zuni tribal fair, an annual secular community event.

and colors, the singing and the sounds of the bells and the drums echoing off the walls—all this touches your spirit. From the day you are born as a Zuni until the day you leave this world, this is within you."

Although some Zuni have converted to Catholic and Protestant faiths—including Mormonism—the Zuni religion remains so dominant in the pueblo that several members of the tribe told me that despite having elected officials, they feel they live in a theocracy controlled by priests. Tribe members who violate taboos—such as the publisher of the now-defunct *Zuni Post* who sometimes touched on religious matters—can expect a visit from a priest or to be summoned before the tribal council for questioning. Even speaking the word "drought" is thought to be dangerous because it might lead to one. "That's just the way it is," one Zuni told me.

A FEW MILES beyond the central pueblo of Halona, Edison Vicenti and his wife, Jennie, have built a Spanish-style stucco home. For 30 years, Vicenti designed semiconductor chips for IBM in Tucson, while his wife worked as a nurse. When they retired in 1996, they moved back to Zuni. Today, the former computer engineer serves his tribe as head kachina priest, overseeing prayer meetings, certain initiation ceremonies and dances. (With his wife, he also makes the petit point turquoise-and-silver jewelry for which the Zuni are known.)

"I don't have any trouble flip-flopping between the two worlds," says Vicenti. "There was a time when I was more interested in science, but it was always a foregone conclusion that I'd be back. My family is in the deer clan, which is a small clan, and the duties of the head kachina priest are part of our clan's responsibilities. It's my turn to handle those responsibilities now."

One important responsibility is teaching Zuni ceremonial prayers to the youths initiated into his religious society. With other tribal leaders, Vicenti worries that Zuni is a vanishing language, like more than 80 percent of the remaining 175 Native American languages. Some scholars estimate that unless something is done, these threatened languages will be gone within the next 40 years. "If we lose our language, we lose the base of our religion and culture," Vicenti says. "And if we lose our religion, we lose what binds us together as Zuni. It is like the roots of a tree; if the tree is uprooted or the roots contaminated, then it dies. It is the same with us." Vicenti shakes his head. "And we can't let that happen."

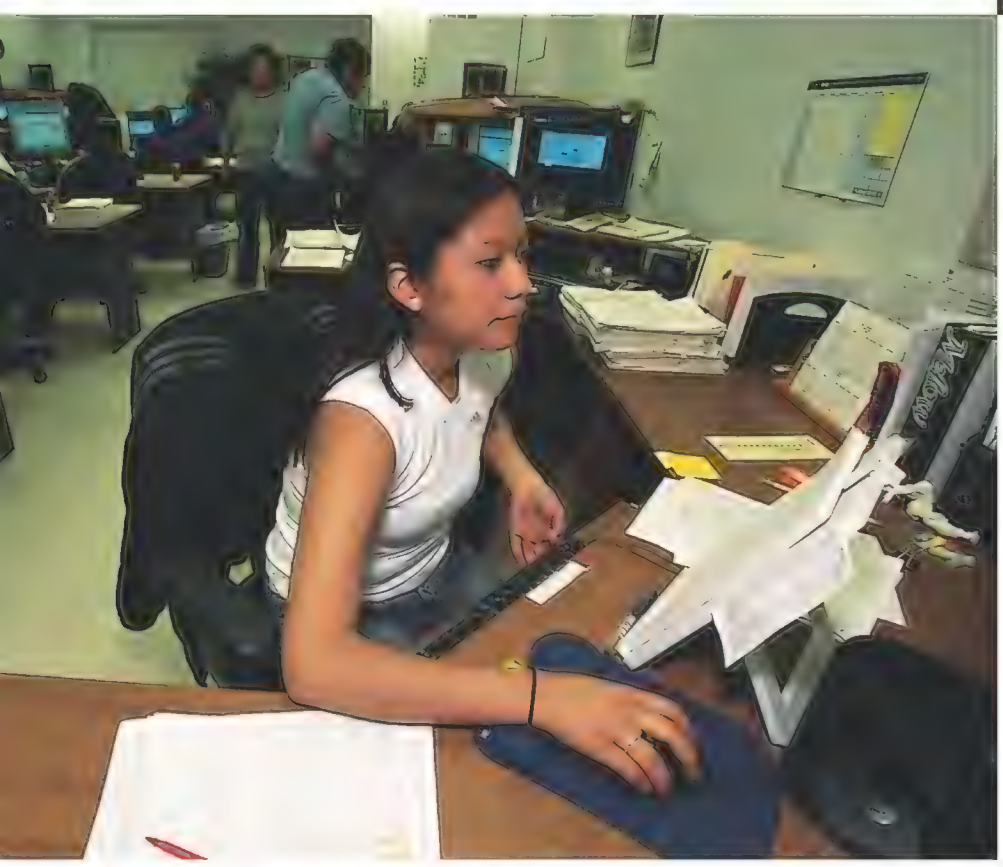
To counter the English language heard in every home on radio and television (and in movies and in daily conversation), elderly Zuni join with Zuni teachers at the

Head Start program at the elementary school to encourage children to speak the Zuni language. There are immersion Zuni language programs in the higher classes as well, and programs conducted in Zuni at the A:shiwi A:wan Museum and Heritage Center. And there is KSHI, the Zuni radio station. "*Kesh shi. Lukkya shamle don a:wan hon dena: a:lashinna dap kya: kol dena: denabekkowa ik'osh na:wa*," intones Duane Chimoni, KSHI's general manager and part-time disc jockey. "Hello. On this morning's program we're going to hear some songs that used to be played in the past."

The songs, however, aren't Zuni songs; they're Blondie's "Heart of Glass" and The Who's "My Generation." "We make our announcements in both English and Zuni," says Chimoni. "If we only do Zuni, then we get lots of calls, people saying 'uh, sorry, my Zuni isn't that good, could you repeat that part about. . . . ' But I like to think it helps, hearing us speak Zuni."

ABOUT THREE MILES from Halona, close to the base of the sacred mesa Dowa Yalanne, to which the Zuni have fled in times of danger, a group of middle school children are learning to make traditional Zuni walled gardens, which are divided into sunken depressions, like a waffle iron. It's a way of Zuni farming not often seen now. In the early 20th century, waffle gardens edged Halona, surrounding the pueblo with low adobe walls and yielding a bounty of vegetables and fruit. But the Zuni River flowed freely then; it does not today, largely because of dams and droughts. The pueblo has few gardens; there's simply not enough water. At Dowa Yalanne, however, the children haul water taken from a spring 12 miles away, making it possible for Jim Enote to teach them this kind of gardening. The children pour buckets of water onto their patches of earth, stirring up the mud and patting it into low walls. "Most of the time, we definitely don't get to play in the mud like this," says 12-year-old Rodney Soseeah, both hands coated with the wet, black earth. "So I like farming, and growing some stuff."

The Zuni way allows for innovation: Darlynn Panteah (right) follows age-old tribal practices when she bakes Zuni sourdough bread. But she subscribes to modern management practices in running her three-year-old high-tech business, Zuni Technologies (below).



"I'm thinking of planting peppers," says Mary Quam, 15. "Then me and my mom can make salsa."

"We'll also be planting corn," says Odell Jaramillo, a teacher and adviser to this program. "For the Zuni, corn is our life, our protector. It's at the center of our religion and ceremonies." Every ceremony requires a sprinkling of white cornmeal.

EVERY YOUNG PERSON I MET hopes to live at the pueblo as an adult. But that means finding a job, which is not easily done. The Zuni schools, including a branch of the University of New Mexico, and a hospital offer employment possibilities. But there are very few businesses, aside from the Indian craft trading posts, a few gas stations and small convenience stores. There are no fast-food joints, no Burger Kings or McDonald's, no hotels.

"You really have to wonder why that is," says Darlynn Panteah, the CEO of one of the most surprising and successful of Zuni businesses, Zuni Technologies, the sole high-tech company in town. "I mean, the same three stores that I grew up with are still the only stores here at Zuni—30 years of the same stores! We all have to go to Gallup to do our shopping."

Panteah blames the lack of local enterprises on tribal policies that have tied up much of the land on the main highway, where hotels and restaurants might prosper. She also laments

Visit Smithsonian.com for an interview with author Virginia Morell.

the tribe's reluctance to bring in outsiders and their businesses. (The tribe is debating whether to build hotels and casinos in their community.) "We lose so many of our young people to the outside. Yet we depend on them; they're the ones who must carry on our religion. So, it's up to us, the older generation, to make good jobs for them at Zuni."

Panteah leads the way from the parking lot outside Zuni Technologies, which operates out of a low-slung, white warehouse. Inside, 62 Zuni men and women sit in front of computers, typing and clicking as they scan stacks of military manuals, converting the heavy, printed texts into digitized forms for the Air Force, Marines and Navy. The business, started with assistance from tribal and government funds and later the Intertribal Information Technology Company, a consortium of tribes that promotes high-tech businesses on Indian reservations, is now three years old, and offering dream jobs to the mostly young people who work here.

"I honestly never thought there'd be a job here at Zuni in my field, management information systems," says Vinton Hooee, 25, and a recent graduate of the University of New Mexico. "It's given me ideas about starting my own business, like Darlynn, to help keep our young people here. It's very hard to be part of Zuni when you're living in Albuquerque. There's a ceremony here every month, and you can't really take part if you're here only on weekends. All of us young people, we're struggling to get the balance right."

WILTON NIIHA, a carpenter and kachina leader, drives with me down a sandy road toward the most dominant feature on the Zuni landscape—the cream-and-rose-striped mesa, Dowa Yalanne—until we see two rocky, tower-like formations split away from the main mesa. "Those rocks are the little boy and girl who saved the people who fled long ago to the top of Dowa Yalanne during the flood," says Niiha. According to legend, "the water was rushing up to the top of the mesa, so the children of the head priest asked if they could place their prayer sticks in the water." The priest granted their request, and the children stepped into the water with the prayer sticks on top of their heads. Instantly, the floodwaters began to recede. "With that sacrifice, the boy and girl saved Zuni," Niiha says. "They became part of the mountain."

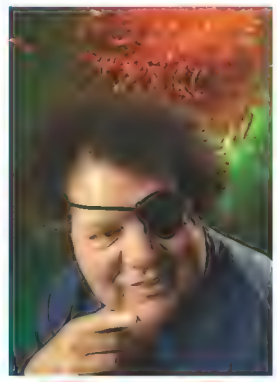
The late afternoon sun reached the two stone figures, turning them a rosy golden hue. It was easy to imagine them as children holding hands as they waded into the water and to their deaths, and asking as all Zuni do for blessings, for their people and their land and the world.

That, after all, is the Zuni way.

The Zuni developed ways to conserve resources in the arid Southwest. One traditional method makes the most of scarce water by concentrating it in the depressions of a grid (below, middle school students prepare the ground). Beans, chilies and cilantro grow well in these so-called "waffle" gardens.

Prolific sculptor Dale Chihuly plants his vitreous visions in a Florida garden

THE NATURE OF GLASS



"The connections between glass and water are so unbelievable and so visual," says Chihuly (opposite, inset), whose works adorn the Fairchild Tropical Botanic Garden in Coral Gables. Opposite: *Blue Polyvitro Crystals* on Fairchild's Pandanus Lake. Above: Chihuly's 1,000-piece, 4,600-pound *Sun*.

AN ENCOUNTER with Dale Chihuly's works is always a spectacular reminder that glass is not just something to see through or drink out of. His latest exhibition, at the Fairchild Tropical Botanic Garden in Coral Gables, Florida, features 15 installations, including a 26-foot tower made out of a half mile of neon tubing and an enormous sun made of a thousand individually-blown glass pieces.

Chihuly, who started out as an interior designer in the 1960s, was the first American to apprentice at Venice's renowned Venini Glass Factory, in 1968. Upon his return to the United States, he helped elevate glass blowing from craft to art. In 1976, the Metropolitan Museum of Art bought three Chihuly vessels inspired by Navajo blankets, and he has been something of an art-world celebrity ever since. "He has personally pushed glass blowing farther than anyone ever imagined it could be pushed," Benjamin Moore, a glass artist who once worked for Chihuly, has said.

It is perhaps surprising that it took so long for Chihuly, 65, to begin putting his work in gardens. Years before his first major garden show, in 2001, he'd said he wanted his glass "to appear like it came from nature—so that if someone found it on a beach or in the forest, they might think it belonged there." And indeed, Mike Maunder, Fairchild's director, sees some Chihuly pieces as a "distillation of the tropical world." If Chihuly's art has borrowed from nature, nature has been paid back with interest, with proceeds from Chihuly's shows supporting Fairchild's conservation and education programs. After Chihuly's 2005-6 exhibition drew record numbers of visitors, the 83-acre botanic garden invited Chihuly for a return engagement. The current exhibition closes May 31.

Since the 1970s, when a car crash robbed Chihuly of vision in one eye and a subsequent injury damaged his shoulder, he has not blown his own glass but has directed the work of others at his studio, in Seattle; he currently employs about 100 people. Critics have called the work "vacant" and have scoffed at Chihuly's methods, with one writing last year, "When is an art factory just a factory?" Chihuly's supporters say the work remains transcendent, and counter that many revered artists—from Michelangelo onward—have had plenty of help.

For his part, Chihuly says he could never have created his more ambitious pieces working alone. And he once mused that while it might be "possible" to mount a large installation by himself, "the whole process would just be too slow for me." He is famously productive, with up to 50 exhibitions a year. At the moment, he says he's weighing offers from gardens from Honolulu to Washington, D.C.

—DAVID ZAX

"I love to juxtapose the man-made and the natural," says Chihuly. Left, top: *Yellow and Red Striped Herons*; bottom: *Green Hornets*. Opposite, clockwise from top left: *Red Reeds* amid arid plants; *Niijima Floats* on the Victoria Amazonica Pool; *Yellow Reeds*; 14-foot-tall *Citron, Green and Red Tower*.

To see more images from the botanic garden, visit Smithsonian.com.

TERESA N. RISHEL; DWIGHT MCNEILL; P. 84 THOMAS MICHAEL ALLEMAN; PARKS ANDERSON; P. 85 TERESA N. RISHEL; P. 87 TOP ROW: TERESA N. RISHEL (2); BOTTOM ROW: DWIGHT MCNEILL (2)

The effort to save the fallen champion shows how far equine medicine has come in recent years. And how far it still has to go **BY STEVE TWOMEY**

BARBARO'S

May 6, 2006: Barbaro, with Edgar Prado aboard, nears the finish of the Kentucky Derby. He won the "Run for the Roses" by six and a half lengths, the largest margin in 60 years.

LEGACY

THE TROPHY rested on a mantel in their family room, beside an oil painting. It was elegant, though small. Roy Jackson easily lifted it down and, in the thin gray light of winter, offered it for closer admiration. Engraved in gold was an event: 132nd Kentucky Derby. A venue: Churchill Downs. A date: May 6, 2006. And: Won By Barbaro.

Roy and his wife, Gretchen, live on 190 acres of Wyeth country in southeastern Pennsylvania, up a sinuous driveway that leads to a house on a knoll. They own sheep, cats, cows and dogs, but mostly they own horses. In more than 30 years, they had never had a superlative racer, never had a horse in a Kentucky Derby nor even been spectators at one until that date etched on the trophy. As Barbaro shifted into an unworldly gear in the far turn that Saturday and began flying as if his 19 competitors had been flash-frozen, Gretchen thought, "Oh my gosh, he really is that good."

Victory meant that he had run six races and had yet to lose. Grass (three wins) or dirt (three), the surface didn't matter. The next jewels of the Triple Crown, the Preakness and the Belmont Stakes, beckoned. Maybe after that, the Jacksons would take him to England to race, just for fun.

Now their 3-year-old colt was living in a veterinary hospital three miles away. He had been there since bones in his right hind leg blew apart in the opening seconds of the Preakness, May 20, 2006. It is mere coincidence, nothing more, that the Jacksons are neighbors of the University of Pennsylvania's New Bolton Center. They did not buy their farm in 1978 to ensure easy visits to sick horses. It just worked out that way. Each day since the accident, they gathered grass from their fields and drove down a two-lane road to the intensive care unit. The home-picked meals were not an official medical regime. They helped keep the bond intact.

Gretchen, 69, and Roy, 70, have known each other since their high-school days in Philadelphia, and finding a more gracious couple would take a long search. As they sat in the family room on a January morning, fenced fields filled the view through a wall of windows. Another wall held a lithograph of six hounds. No one knows to whom the dogs once belonged, but the image has been in Roy's family a while. Imprinted on the lithograph beneath each hound's face is a name. The one farthest right reads "Barbaro."

"He is always in my heart," Gretchen said of the hound's namesake. But seeing him each day was "really, really difficult." He was almost unfailingly alert and playfully nippy, still magnificent, if thinner than before the accident. But looking at the world through a hospital window was not a Thoroughbred's life.

"My thing is," Gretchen said, "when I walk into this house, I let all the dogs out. I let them all run. I just love. . . . "

She stopped, searching for a word.

Freedom?

"Yes. I love it. It's what they're meant to do. Run. Hunt. I don't worry about them at all. And to see a horse cooped up in a stall, it sort of really bothers me. But what would bother me worse is if we don't give him a shot."

Nearly 32 years ago, a champion filly named Ruffian snapped her right front leg on the backstretch at Belmont Park on Long Island, New York, during a heralded one-on-one match race with Derby winner Foolish Pleasure. In the genteel euphemism of racing, Ruffian "broke down." Surgeons labored, but euthanized her within hours.

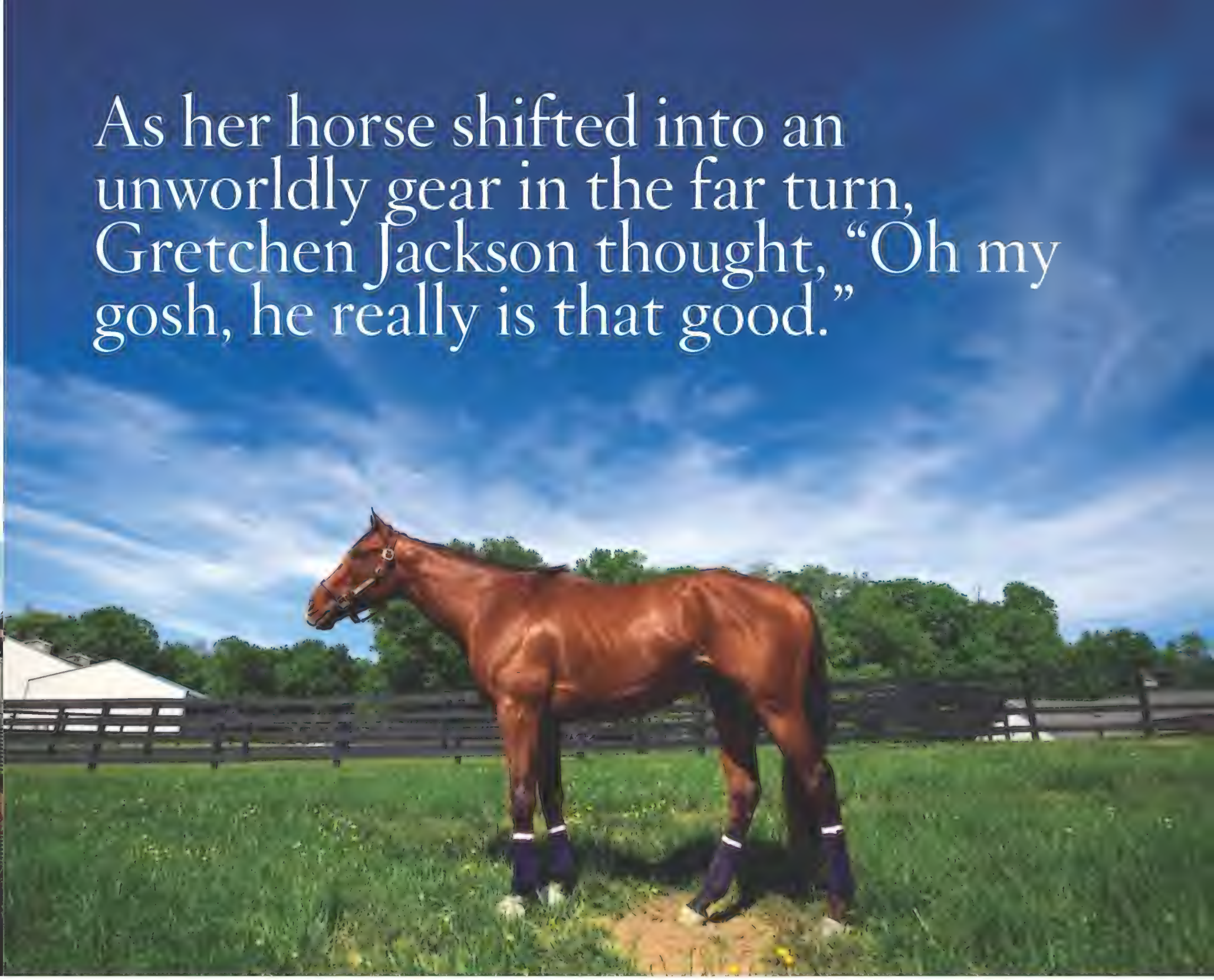
Celebrants after the Derby included Barbaro's owners, Gretchen and Roy Jackson (lofting the trophy); jockey Prado; and trainer Michael Matz. In the week that followed, Barbaro rested at a training facility in Maryland (opposite).

Today, swift death after such a severe injury is still the fate of many, many racehorses. By virtue of size and anatomy, they make challenging patients, and healing them often costs more than they are worth or their owners can afford. But surgery, anesthesia, infection control and recovery have raced far forward since Ruffian's death in 1975. The public may see Barbaro merely as a compelling narrative. A model athlete, he was nearing his sport's pinnacle when, in a finger snap, the quest became not more trophies but survival. Yet Barbaro also represents bigger things. He is the greatest illustration of the advancements of equine medicine. He also highlights how far it needs to go.

There remains an insidious threat to the health of all horses, not just Thoroughbreds. It is a hoof disease called laminitis. Science has not fully parsed its workings, much less found a pill to ward it off. Research money is scant, even though a federal study suggests tens of thousands of

REED PALMER PHOTOGRAPHY / CHURCHILL DOWNS; PP. 88, 89 JOHN FLAVELL / ASSOCIATED PRESS

As her horse shifted into an unworldly gear in the far turn, Gretchen Jackson thought, "Oh my gosh, he really is that good."



RYAN DONNELL

horses have laminitis each year and several thousand die from it. A horse with a broken limb is especially susceptible to it. "It is the Achilles' heel of all these repairs we do," said Wayne McIlwraith, a professor of equine surgery at Colorado State University.

After the accident, New Bolton's medical skill gave Barbaro a chance to live, and by January his broken leg was healed, though not perfectly. But by then, laminitis was trumping medicine.

WITH THE 2006 PREAKNESS having just concluded, a veterinarian named Dan Dreyfuss stood inside Stall 40 at Pimlico Race Course in Baltimore. He was waiting for images to materialize on a computer he had set atop a straw bale. Or maybe it wasn't a straw bale. He cannot recall all the details of those intense moments. Stripped of saddle and silks, Barbaro stood diagonally in Stall 40, which on Preakness Day is offered to the reigning Kentucky Derby winner.

STEVE TWOMEY, *who has reported for several newspapers over three decades, now teaches journalism at New York University.*

The colt was the least anxious mammal present. "He stood there like a statue," Dreyfuss said. Barbaro seemed calmly aware that he was grievously wounded, because he was keeping weight off the injured leg, now braced with an aluminum splint called a Kimzey. Any horse person would know the leg was broken near the fetlock, a joint just above the hoof, but only X-rays would tell how severely.

Dreyfuss, a private practitioner in Maryland, had never seen Barbaro up close until earlier that day. Trainers often hire a local veterinarian when they bring a horse to a track, and Barbaro's trainer, Michael Matz, had used Dreyfuss before. Having seen the leg break on a television in a hospitality tent, the doctor had started sprinting even as jockey Edgar Prado slowed Barbaro to a sickening walk as the field thundered ahead.

In the stall, in the straw, a technician was bent beneath the horse, moving a radiographic plate around the damaged leg, as Dreyfuss' partner, Nick Meittinis, snapped images with a hand-held X-ray machine. At the computer screen, black-and-white photos took shape, one after the other.

The pastern bone, below the fetlock joint, had dissolved into some two dozen pieces. The cannon bone, above the fetlock, had splintered. A sesamoid bone in back of the fetlock had cracked. Even a single break is bad. Barbaro was at the extreme end of the injury scale. "One look at that and you know you're in for an absolutely huge fight," Dreyfuss said.

A Thoroughbred weighs more than half a ton, and as he gallops, no more than two legs at a time absorb the shock of earthly contact at more than 35 miles per hour. Sue Stover, a professor at the University of California at Davis veterinary research laboratory, says that many runners, animal or human, wind up with microscopic bone damage because of the repetitive pounding of training and competition. Regularly, the body swaps such damaged tissue for new, but weak spots can develop if damage occurs faster than replacement.

That does not mean a bone will break. It means the risk of injury is higher. After examining sample tissue from racehorses that died or were euthanized after leg fractures, Stover's laboratory found that more than 90 percent had preexisting bone damage. Nor are fatalities the only threat, she said. Imagine a stable of 50 horses that race regularly. In three months, there might still be 50 horses, but a fifth will no longer be competing. Age or illness will have taken some, but muscular-skeletal injury will have sidelined the rest, at least temporarily. "It's huge, it's huge attrition," Stover said.

Nobody, certainly not a family on a Sunday outing, wants to see a mercy killing on the track. Nobody wants to lose a prized investment, either. Racing is a $10.7 billion-a-year business that employs 146,000 people, according to a 2005 study done for the American Horse Council. So there are reasons both humane and economic to reduce track fatalities, which average more than one a day in the United States and Canada.

One idea is to replace dirt track surfaces with more forgiving, man-made materials. The California Horse Racing Board, in fact, has ordered major Thoroughbred tracks in its state to switch to synthetic surfaces by January 1, 2008. But a dream solution involves finding an early-warning system. Researchers believe markers in the blood can telegraph whether a horse is experiencing risky bone damage, says McIlwraith of Colorado State. If so, the animal could be held out of training or competition until it heals. "We're not quite there yet," McIlwraith said, "but we're getting there."

No evidence exists that Barbaro had underlying bone damage. In fact, Matz, his trainer, was criticized before the Kentucky Derby for not running him enough to have him in top form. That complaint evaporated after Barbaro won by six and a half lengths, the biggest margin in 60 years.

Perhaps in the Preakness he did nothing more than take "a bad step," the phrase often heard after a horse breaks a leg. Or perhaps an incident that occurred just before the bell was a factor. Barbaro burst through his gate and had to be checked before being led back to his post position. No injury was found, but that doesn't guarantee that nothing was wrong. We might never know why, moments later, the skeletal structure of his lower leg failed massively.

After seeing the images in Stall 40, Dreyfuss told Matz and the Jacksons, who had gathered just outside, that the leg was "bad." Then he returned to Barbaro, ducked beneath him and took off the Kimzey splint. He unwound Barbaro's rundown bandage, the white legging horses wear as protection against abrasions. There was more that Dreyfuss needed to know.

Running his hands up and down the leg, he checked to see if bone splinters had pierced the skin. Incredibly, none had—a small piece of luck. An open wound would have meant that dirt and germs from the track were inside, creating a grave risk of infection. Then Dreyfuss checked circulation near the hoof. Without good blood flow to promote healing, the future would be very bleak. "I could feel a pulse," he said. Another good sign.

The doctor never considered putting Barbaro down. Nobody did. This was the Derby champion. And Dreyfuss knew the Jacksons by reputation as owners who cared. "I knew we were going to try to save this horse," Dreyfuss said. "No matter what."

He knew who would do the saving too.

Barbaro had been hurt only 82 miles from one of the best large-animal hospitals in the country, and from the very surgeon who had pioneered the use of a surgical device that would be central to Barbaro's salvation. Some 90 minutes after the Preakness, the horse was secured inside a trailer heading northeast to Kennett Square, Pennsylvania.

ON A SHELF IN A NURSE'S ROOM at the New Bolton Center is a framed photograph of the chief of large-animal surgery. Scrawled beneath is a caption: "He is as blunt as his crew cut." Dean W. Richardson, who is 53, can be intimidating—but is "a marshmallow" inside, Dreyfuss said. He can be hard—on himself as much as anyone. And his fan base among his peers is sizable. Midge Leitch, who supervised Richardson when he was

STAN HONDA / GETTY IMAGES

a surgical intern at New Bolton, said he gives great speeches off the cuff, loves tools and loves solving the puzzles of surgery on massive animals.

Shortly before he performed a recent arthroscopic operation, Richardson entered a small conference room at New Bolton and tossed a hefty stack of mail on a table. "This is what I get," he said. Americans had been thanking him, offering home remedies and, in rare instances, urging him to euthanize Barbaro. He found the last sentiment odd: "Their knee-jerk reaction to any animal that's uncomfortable is to think they're doing them a favor by killing them."

If an injured animal can be helped to a life of quality and comfort, he said, "then I think going through a period of pain is something most of us, if we had our choice, we'd elect to go through." This is not the old era. Surgeons can do much more. "A situation like this, you get slapped in the face that people really don't know that we fix horses' broken legs on a pretty regular basis."

Not all broken legs. As much as anything, the decision usually comes down to money. Does an owner have thousands of dollars for surgery and recovery? Does the horse have value, economically and emotionally? Such judgments are intensely personal, not only with a horse but with anything. Some of us use our money to buy art, some to buy football season tickets, some to give to charity, some to save our dog or cat. Or horse.

In the Jacksons' case, Richardson said, "money's just not a limiting issue." Roy, a descendant of the Rockefellers, is a former owner of two minor-league baseball teams and a former president of three minor leagues, and Barbaro had just won $2 million at the Derby. And, Richardson said, "they love the horse. They truly love the horse."

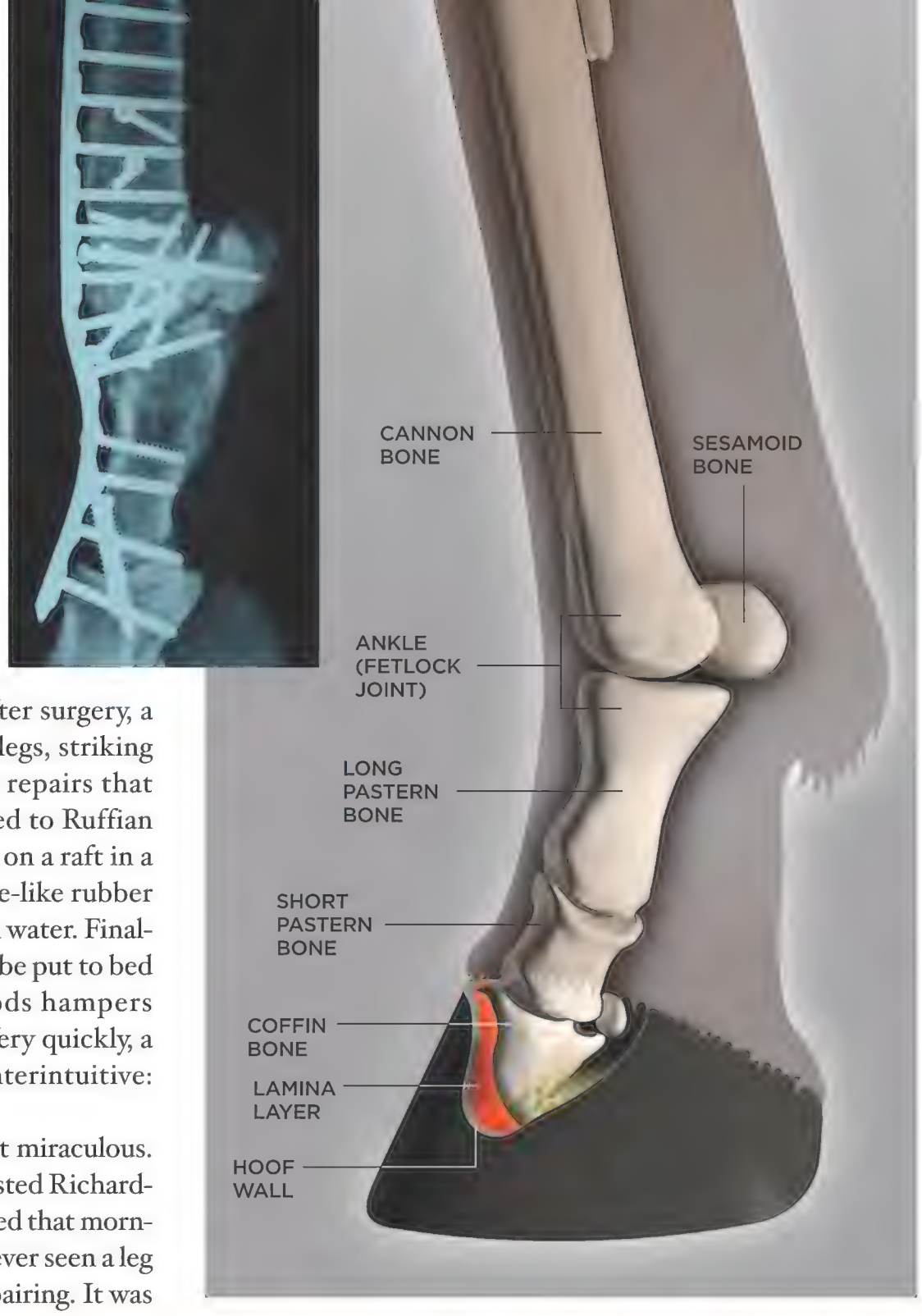
The goal of Barbaro's surgery was not to enable him to compete again. His racing career was over. But if the leg could be rebuilt, he might pass happy days strolling pastures and producing little Barbaros. To reproduce, a stallion must be able to stand on his hind legs and mount a mare; artificial means are not allowed in Thoroughbred racing. Stud fees for a champion like Barbaro would be huge. But Gretchen Jackson's reasons seem simpler. She just wanted him to be a horse again, at least as much as possible. Barbaro had done a marvelous thing, won the Derby. He deserved a chance to live on, as long as his pain and discomfort during the rehabilitation effort did not become intolerable.

May 20, 2006: At the start of the Preakness, Barbaro, again with Edgar Prado aboard, broke early out of his starting gate (opposite). Seconds after the race was started, the horse pulled up with a broken right hind leg, and Prado and a track assistant tried to calm him (above). Prado's concern was clear even after Barbaro was taken to his stall (right).

JONATHAN ERNST / REUTERS / LANDOV; BILL FRAKES / SPORTS ILLUSTRATED

On Sunday, May 21, the day after the Preakness, a surgical team assembled in a New Bolton operating room. Richardson said he made no pep talk and laid out no plan. He knew what he would do. The surgery would not be groundbreaking; it would merely be immensely challenging.

Any operation to fix a horse's leg is more complex than fixing a human's. For one thing, horses are anesthetized while standing and promptly collapse, leaving a massive, limp animal to be moved around operating and recovery rooms. At New Bolton, slings suspended from ceiling monorails do the job.



Then, as anesthesia starts to wear off after surgery, a fearful or disoriented horse might flail his legs, striking the floor or walls and destroying the very repairs that have just been made. That is what happened to Ruffian in 1975. At New Bolton, a horse can awaken on a raft in a heated pool, his legs dangling below in glove-like rubber sleeves. If he flails, he hits nothing but warm water. Finally, after a horse is awake and calm, he cannot be put to bed while the leg heals. Lying for long periods hampers breathing, digestion and other functions. Very quickly, a horse must be able to do what seems counterintuitive: stand and put weight on a repaired limb.

In Barbaro's case, that would seem almost miraculous. Liberty Getman, a surgical resident who assisted Richardson in the operating room, said she was stunned that morning to see the X-rays. "I don't know that I've ever seen a leg look like that that anyone has thought of repairing. It was much worse than I had hoped."

But Richardson had an ally, a narrow, stainless-steel bar with 16 threaded screw holes. Inserting plates with screws beneath the skin to stabilize human bones is common, and it's been done as long as 35 years in horses. But in the past few years, Synthes Inc. of West Chester, Pennsylvania, has developed the locking compression plate (LCP), a particularly secure and effective type. No equine surgeon had more experience with it than Richardson.

Using an LCP about 12 inches long, as well as about a dozen independent screws and a cast on the outside, the veterinarian methodically reestablished a solid bone network in more than five hours of surgery. Steven Zedler, another surgical resident who assisted, said the process was a "piece-by-piece, step-by-step thing, 'Yeah, I'll take that and screw it to that.'" Richardson had to fuse both the fetlock and pastern joints, though that would mean Barbaro would walk awk-

"It was much worse than I had hoped," a surgical resident at the New Bolton Center said of Barbaro's leg. Dean Richardson (opposite) led the team that repaired it, affixing several bones with a locking compression plate (opposite, above). After awakening (above), Barbaro was removed from a heated pool, which is used to make reinjury less likely if the patient flails.

SABINA LOUISE PIERCE; P. 94 UNIVERSITY OF PENNSYLVANIA; STEPHEN ROUNTREE; SABINA LOUISE PIERCE

wardly. At no point, Richardson said, did he see any sign of preexisting bone damage. On the contrary, the staggering amount of breakage suggested "a very significant misstep."

No plate can hold the weight of a horse indefinitely by itself. And infection under and around it is always a threat. The hope was that the leg would heal and resume supporting Barbaro before either metal fatigue or infection became a problem. The overhead monorail took him to the recovery pool. In public comments during the next few days, Richardson made no promises. The horse had a fifty-fifty chance, no more. If those odds seemed low, Richardson was acutely aware that laminitis could undercut the surgical work.

For surgeons, is that prospect irritating?

"Irritating"? Richardson repeated, as if to say you're joking. More like maddening.

ON JULY 10, after weeks of good news about Barbaro's recovery, Roy Jackson telephoned his wife from an office he keeps near their home. He told her Richardson wanted them at New Bolton, immediately. Barbaro had laminitis as bad as a horse can have it. "To me, it was the kiss of death," Gretchen said. "So I went over there to say goodbye to him, basically."

A horse's feet are complex marvels, because the animal moves on its toes, like a ballerina. Each leg ends in a single digit called the coffin bone. That digit is surrounded by the hoof, which is the equivalent of a toenail that completely encircles the toe. In the middle, between coffin bone and hoof wall, are two layers of laminae.

Larry Bramlage, a former president of the American Association of Equine Practitioners and a surgeon at Rood & Riddle Equine Hospital in Lexington, Kentucky, likens laminae to a tiny forest of pines whose branches intertwine. They bind the coffin bone to the hoof wall, preventing the digit from shifting as the horse moves. Laminitis breaks that bond. The laminae start to give way, causing pain and discomfort; if enough laminae detach, the coffin bone rotates

within the hoof or moves downward. The pain is usually so excruciating that often the only humane step is euthanasia.

In 1998 and '99, the U.S. Department of Agriculture checked thousands of horses and found that 2.1 percent had experienced laminitis in the previous 12 months, and that 4.7 percent of those horses had died or been euthanized. Applied to today's estimated population of 9.2 million horses, that would mean 193,000 cases and 9,000 deaths.

For owners, the disease is emotionally and financially draining, and for the horse it is "horrible," said Fran Jurga, editor of *Hoofcare and Lameness* magazine. Horses are "prey" animals, meaning the hunted, not the hunters. Running is a defense; it's in their genes. If laminitis restricts them, they become depressed. "They know they can't escape," Jurga said. "They're kept in their stalls. They lose their sociability."

Laminitis begins with any of an odd assortment of triggers, many of them involving problems in the gastrointestinal tract, including eating too much green grass or too many carbohydrates. Among other causes are severe colic and pneumonia. But knowing the triggers is not the same as knowing why they cause laminitis. How the feet wind up in trouble is not yet fully understood. All a horse owner can do is try to avoid the triggers and, if laminitis begins, treat the symptoms and reduce the effect of the triggers.

From the first moments after the Preakness, Barbaro faced a serious trigger: uneven weight distribution. A horse with a broken leg will, naturally, shift weight to the other three legs. That burden often leads to laminitis in the hoof opposite the broken leg. But, says Rustin M. Moore, an equine surgeon and researcher at Ohio State University, "we really don't know" the precise sequences and interactions. Sometimes laminitis comes, sometimes it doesn't.

Barbaro's laminitis came soon after major follow-up surgery. Screws in his leg had bent or shifted, and infection had set in. On the leg opposite the broken one, the disease erupted so severely that Richardson had to remove most of the hoof in the hope that Barbaro would grow a better one with working laminae. It was a very long shot.

"We were close to putting him down," Gretchen said. "We just thought we're asking too much of him." She kept turning it over. "You see all this, and it's just like, 'God, this poor horse.'" But then: "He's back, trying to bite you. Eating. Never stopped eating." Sick horses often retreat to corners, lose their appetites, surrender their spirit. But Barbaro, Roy said, always kept looking at them as if to say "I can get through this." In conversations with Richardson, they agreed to go forward as long as Barbaro was comfortable.

Slowly, the horse got better. His hoof started to regrow. As the months passed, Richardson took him outside for short walks. Christmas came, and New Bolton released a video of the patient, strolling. Soon, he might be well enough to continue his recovery in more comfortable surroundings, perhaps the fields of Kentucky.

ON MONDAY, January 29, the Jacksons brought grass from the farm to Barbaro, who ate every shoot. Then, as they stood by at his stall, Richardson gave America's most famous horse a tranquilizer and then an overdose of barbiturate, and Barbaro died in a deep sleep. Gretchen hugged the doctor and thanked him. "And he said, 'I failed you.'"

The turn of the year had brought a swift descent. In the leg with laminitis, the hoof wall was regrowing only in front. The foot was unstable, so Barbaro was shifting more weight to the broken leg, which developed an abscess. Richardson tried to ease the burden on that leg with an exterior scaffold, but then the two front legs developed laminitis. Every leg was impaired. On the last weekend of January, Gretchen and Roy were ready to let go. "I think Roy and I were pushing Dean more than Dean was pushing us," she said.

In the end, was it all for nothing?

"I feel good he had eight months," Richardson said by phone a week later.

After Barbaro's surgery, get-well wishes were posted both outside the New Bolton Center (opposite) and inside (where surgical resident David Levine and Richardson visited). By last September, Richardson (above) could take his patient for walks outside—but in January the effort to save Barbaro was undone by laminitis, a poorly understood hoof disease.

JIM GRAHAM / REDUX; P. 96 MATT ROURKE / ASSOCIATED PRESS; SABINA LOUISE PIERCE

That was nearly 20 percent of his life, and most of those days were pleasant. "I would love for the public at large to understand that he had lots of time where he was a good, comfortable horse." But the patient died, so "in my mind, I absolutely failed."

Medicine does not advance in a straight line. There are always setbacks, and they increase knowledge and awareness. Maybe, instead of putting down a horse with a broken leg, owners might remember how much was done for Barbaro and "wonder if there's anything we can do for our horse," said Bramlage, the surgeon from Rood & Riddle hospital. Perhaps other veterinarians will see how effective locking compression plates are.

Barbaro's greatest impact will surely be the spotlight he has cast on laminitis. The key is to learn how to prevent it, and researchers believe major progress toward solving its mysteries could be made with $10 million or more, Moore said. Joan C. Hendricks, dean of Penn's School of Veterinary Medicine, said she is angry that so many horse owners still lose their animals to laminitis. "I want it over," she added.

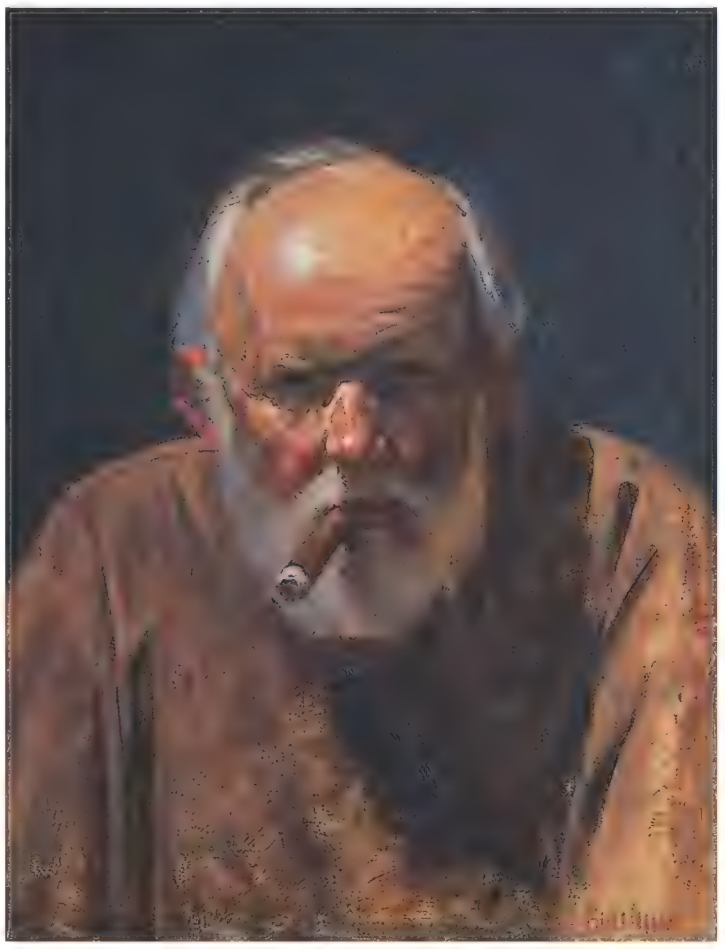
Reaching that goal became easier in mid-February, when Penn received a $3 million gift from the Jacksons, who are both Penn graduates, to endow a chair for the study of equine disease. That position will be "the cornerstone" of a campaign against laminitis, a school spokesman said. The endowed chair will bear the name Dean Richardson.

The Jacksons were still contemplating what sort of memorial to erect to Barbaro, who was cremated. We will never know for certain whether he would have gone on to be one of the truly exceptional racehorses. But the Jacksons still have the memory of a great day in May. "It's just amazing that something we bred won it," Gretchen said. They still have the trophy, and they still have the oil painting that was beside it, done by famed horse painter Fred Stone. It shows Barbaro, with Edgar Prado aboard, flying down the track at Churchill Downs.

Two Men and a Portrait

One wondered how an artist brings paint to life. The other showed him **BY WILLIAM ZINSSER**

THE AMERICAN PAINTER Thomas S. Buechner is best known for his portraits. His is the portrait of Alice Tully that hangs in Alice Tully Hall, in Lincoln Center, and his portrait of a teenage girl named Leslie is in the collection of the Metropolitan Museum of Art. In a long career of painting more than 3,000 pictures he has also found time to be the founding director of the Corning Museum of Glass, director of the Brooklyn Museum and president of Steuben Glass. He is also a teacher and a writer; his book *How I Paint* is a model of explanatory prose. He is also, less pertinently, my second cousin; our German-American grandmothers, Frida and Louise Scharmann, were sisters.



Buechner by Buechner: "When I'm painting someone, I don't want anything to distract me from that person. I put the sitter alone in dark, empty space."

Over the years Tom has occasionally asked me to be his editor, most recently on the catalog for a museum exhibition of 175 of his works that chronologically tell the story of his life as an artist. Putting that jigsaw puzzle together was a complex task, and afterward Tom said, "I don't know how to thank you." I told him I was just glad we had been able to solve the problem. Then he said, "Would you like me to do your portrait?" I said, "Oh, no." WASPs are trained not to put people to any extra trouble.

But that night my wife said, "It would be nice to have a portrait by Tom." Of course she was right, so I called Tom back, and we agreed that I would come to Corning, the city in south-central New York where he has long lived, and spend two days sitting for him.

"I'll be asking you a lot of questions," he said. That sounded ominous. I've always thought of portrait painters as unlicensed psychiatrists, using their eyes instead of their ears to read the human heart; I doubt if Rembrandt's sitters had many secrets he didn't know about. What would it be like to have my 80-year-old cousin reading my 83-year-old face and putting onto canvas what he saw written there?

I decided to bring along my reporter's notebook and do a portrait of my own. It would be a triple portrait. One would be of Tom Buechner and his methods as a portrait painter. One would be of myself as I sat and thought my thoughts of time and mortality. And the third would be of the portrait as it gradually came to life.

Corning is a small city best known as the locale of the 156-year-old Corning Glass Works. I got there by taking a six-and-a-half-hour bus ride from New York City, arriving in late afternoon. Tom picked me up at my hotel to take me to his studio. He looks like an old German professor: white beard, metal-rimmed glasses, amused blue eyes. He has looked that way since his 50s; he seems to have always wanted to look older and to feel more German than he is. He has spent the last 18 summers teaching in Germany, and one of his amusements is to paint his idea of the grotesque figures of Teutonic mythology in the operas of his favorite composer, Richard Wagner.

I, meanwhile, have always wanted to look younger than I am and to feel 100 percent American. In a lifetime of travels I've avoided the homeland of the Buechners and the Scharmanns and the Zinssers: too much anger over

World War II. But otherwise Tom and I are similar in our values and are connected by a bond of trust and affection. I had no fears about putting my life in his hands.

"The first step is to take some photographs of you," he said as we drove to his house, which was tucked into a hillside several miles outside town. His studio is an extension of the house—a lofty space with an angled ceiling and a huge window that looks out on pure nature: woods, birds, deer. (My office, in mid-Manhattan, looks out on the cars and buses of Lexington Avenue.) The studio was immaculate, every paintbrush clean, every tube of paint neatly resting in its ordained place.

Hanging on one wall were several portraits of successful-looking men that Tom had recently completed. These commissions—of CEOs, board chairmen, college presidents, headmasters—are a portrait painter's meal ticket. Tom has done 327 of them, including many women and children. When the mighty chiefs retire, it is a common custom to order a likeness that will gaze down on future generations from the oak-paneled walls of clubs and boardrooms and college halls. Knowing this, the chiefs arrange their features for posterity, their visage serious, their suits and shirts and ties suitably sober.

For my portrait I was dressed in my lifelong uniform: odd jacket, pressed charcoal-gray pants, white Brooks Brothers button-down shirt, conservative tie, sneakers. Seemingly casual, the look is carefully chosen to express who I think I am.

I also always wear a hat.

"I still remember, back in the '60s," Tom said, "when I was director of the Brooklyn Museum and you were on the board, all the other trustees came to the meetings in an overcoat and you wore a parka. Today you're nicely dressed, but you're wearing sneakers. It gives you a boyish look. It's also a screw-you look: 'You may think I'm a preppy, but I'm a different kind of preppy.'"

My portrait, we agreed, would be of medium size—not the large whaling-captain size—and would be vertical, ending above the waist. "The first decision is always about where," Tom said. "I figure out where things are going to go on the canvas—it's like a line map—and where the contrasts are going to be. The usual tendency is to start with the eyes because they demand the most attention; we communicate with our eyes. When I was a kid my father advised me to 'Start with the eyebrows; then you'll know where the eyes should go.' There's no basis for that whatever. In your case the eyes are not as important as where the necktie is going to be, because that necktie, against the white shirt, is the strongest contrast in the picture."

The portrait of the author began with a photograph, which "is full of information about facts, not feelings," Buechner says. It captures the sitter's pose.

We tried different poses, Tom taking a digital photograph of each, until we found the one we liked best—the body slightly tilted to the right, the head tilted slightly to the left. The photograph of that pose, greatly enlarged, would be Tom's point of reference when he did the painting. Portrait painters have used photographs as an aid since the days of Thomas Eakins, in the late 19th century, and today they paint almost exclusively from photographs; 21st-century man is too busy to sit still for an artist. But Tom likes to paint from life as often as he can. "A photograph doesn't have presence," he said. "A person is a living, changing, evolving thing—which is much more exciting."

"The first thing I have to do," Tom said, "is to make a compositional sketch: this is where the head goes. The shape of the head and the way we carry it on our shoulders are the essential elements in recognizability. You'd recognize me from the back, a block away, by my silhouette. The most important job for me is to achieve a shape that you'd be recognized from: What is the essence of you? The biggest part of your likeness is the shape of your head, the length of your neck and your posture—not your eyes and nose and other features."

He showed me some one-minute pencil sketches he makes at airports and in meetings—widely different men and women. "I know a lot about these people," he said. "They all have a distinctive head shape, and each one carries it on the neck in a characteristic way. Remember Audrey Hepburn, how lovely she was? It was partly because of the way her very long neck positioned her head."

The photographing done, we called it a day and went out to eat; I would start sitting for my portrait in the morning. Actually, Tom didn't call it a day. At dinner he was still working, studying my smallest move.

When I reported for duty the next morning, Tom, consulting the photograph, had situated my portrait on the canvas, which he had already painted gray-green. It was an outline drawing, simple as a comic strip, but even in that primitive form the finished portrait was visible. Now Tom was ready to start

WILLIAM ZINSSER COLLECTION; P. 98 THOMAS S. BUECHNER

on me. He sat me on a stool and put the photograph beyond me—"quite far away," he said, "because I only want to use it to get the sitter's body language, not the details. I don't think you can build a portrait out of details.

"For me, portraits fall into two general groups," he explained. "One is about a moment in time—a situation in a specific context. The other is about a person alone.

"The first category is epitomized by Sargent's painting of a woman reading to a boy. That's the specific context. If you signed up for a portrait by Sargent, you signed up for 60 sittings; it could take more than a year. Children really sat, and often they clearly would like to be somewhere else. That kind of portrait can also include furniture or clothes, or catch a gesture or a fleeting smile. Sargent really captured those incredible moments.

"The other kind of portrait is about a person alone—a person for whom time has been stilled. It's epitomized by Rembrandt, or Velázquez, or Ingres. I prefer that approach, partly because it enables me to focus on one thing at a time, separating design and form and color into three successive stages. But mainly I use it because when I'm painting someone, I don't want anything to distract me from that person. I put the sitter alone in dark, empty space. The stark background both startles and focuses attention: you see only the person. That creates a unique situation because in our daily lives we never see anybody out of context, including ourselves. Have you ever hung a piece of black velvet behind you and looked at yourself in the mirror? We are each of us quite alone, and that's what I try to paint."

That was a sufficiently terrifying thought to take into my first posing session; there would be no escaping aloneness. I tried to compose my features into the expression we had caught in the photograph and awaited my fate. Tom lit a cigar, chomped on it purposefully, selected a brush and went to work. Now he really looked like an old German professor.

"I know in advance," he said, "that you have to look wise, kind, experienced and humorous. You have to look like a guy who's been around—a guy who knows his way. I'll think of other ways you have to look as I go along."

I tried to look wise, kind, experienced and humorous, my mouth in a slight smile to lighten the gravity of the occasion. Humor is the lubricant of my life, and I wanted that in the picture. But I also wanted its opposite: authority and accomplishment. Above all, I wanted independence: the suggestion of a life lived with originality and risk.

Next: a compositional sketch, where "the lines represent decisions about location and likeness," Buechner says.

I was born into the Northeastern establishment and have never quite stopped trying to pretend that I was not. During World War II, I left the cocoon of Princeton to enlist in the Army and learn about the wider world—which, as a G.I. in North Africa and Italy, I did. Home from the war, I didn't go into the 100-year-old family shellac business, William Zinsser & Co., as I was expected to do, being the only son, but skated out on the uncertain ice of journalism, uprooting my life four or five times to try a new direction when the work ceased to be satisfying. I've taken pleasure in being a lone cowboy, making my own luck. Could Tom also put that in his picture?

He was off to a fast start, putting paint on the canvas with strokes that were swift and sure. He was totally at home in what he was doing, like any artist or artisan—jazz musician or auto mechanic or cook—who has been there a thousand times before. He worked partly from the photograph and partly from my head, only occasionally asking me to sit still. Otherwise I was free to ask him questions, which he answered while continuing to paint.

"The hardest thing for a painter," he told me, "is to create what he wants, not what he sees. He can build what he wants out of what he sees. That's when a painter starts to become an artist—when he starts to deal with what's in his mind, not just with what he sees. You have to bring something to the party. Students are so eager to record what they see that they don't think about what they want. Do they want to just copy a photograph? Why would they want to do that? They've got the photograph."

Our first session, Tom explained, was about design. "I try to decide what's going to be dark and what's going to be light. What are the major contrasts? That's what's going to make the painting—that's the essential composition."

After several hours Tom declared the morning session over, and I took a look at the portrait. A design had been established. The left side of the face was somewhat dark, and some hills and valleys had begun to appear on the cartoon-strip countenance. The skeleton on the canvas had come partly to life. The colors were muted—umber and gray-green—but at least there was blood in his system. Definite progress.

WE BROKE FOR LUNCH and a siesta, and at 2 o'clock Tom was back at his easel, a new cigar lit. "This second session is about form," he said, "I want to make the portrait start to look three-dimensional by adding strong lights

THOMAS S. BUECHNER

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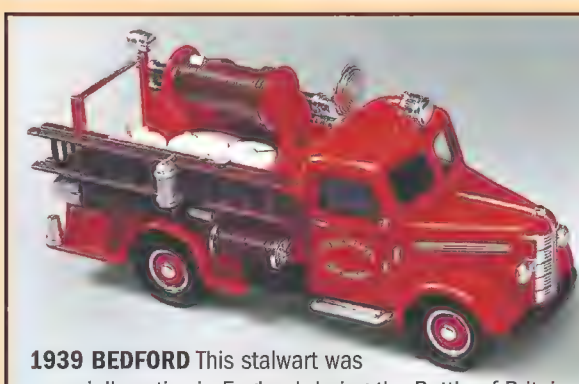

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and darks." I had noticed that Tom was a little lower than I was, and I wondered how he had arrived at that angle of vision.

"It's nicer to look up to people than to look down on them," he said. "Our respective eye levels are as important in a painting as they are in life. It has a lot to do with how the artist thinks about his clients; when we look at a great painting by Rubens or Van Dyck, they place themselves lower than their subject. Sargent looked down on his children, but that was a charming reality—these are children. But when Velázquez painted the infanta he placed her at eye level, respecting her royalty."

The studio was lined with bookshelves full of art reference books and monographs, and occasionally Tom took one out to show me a painting that illustrated a point he was making. "Continuously studying other painters—Rembrandt, Titian, Sargent, Lucian Freud—reminds me about the power of simplicity," he said. "That has helped me to focus on the person rather than on the moment."

As the person being focused on, I realized that I really didn't know much about my face. The man who looked back at me from the mirror was just an unremarkable assortment of eyes, ears, nose and mouth—an amiable-looking chap, eager to please. What else was there to know?

"Your head is like a slightly tapered box," Tom said. "There are several characteristic head shapes—oval and teardrop and inverted teardrop, which is especially common: all those double chins and wattles. The pull of gravity is always working; when people gain weight it's not around the forehead. Your forehead is a topographer's dream. Ordinarily the skin just lies on the bone, nice and tight. But when you start to talk—to express yourself—your forehead comes alive. It makes all those wrinkles come into play. Old faces are very nice—there's so much going on. Look at what Rembrandt did in those last self-portraits."

Several hours had slipped by. I had been working so hard at my own craft—asking questions—that Tom hadn't asked many questions of his own. Perhaps I was afraid of being left alone with my thoughts. But then he said, "Have you considered who gets this painting when you're dead?" POW! I wasn't going to be let off easy after all. I had a brief vision of my grown children, Amy and John, fighting over my portrait—or, worse, not fighting over my portrait—and then I tried to push the subject out of my mind. But it kept sneaking back: the whole point of having a portrait painted is to leave a record behind. I felt both good and bad—good because I wanted to be remembered, bad because I didn't want to be dead.

Then comes form: the artist uses raw umber to organize the darks and lights of the composition and develop shapes.

Stage two ended, and I went over to see how my face had metamorphosed. It was still the same neutral color, but it was far more alive. Light, the painter's miracle tool, had come to the rescue, illuminating the right side of the forehead in a high shine. But the left side of the face was dark. Those were the contrasts Tom had mentioned, which I had never noticed in a lifetime of looking at portraits. I thought my face was light. I thought everybody's face was light. Now I saw that the interplay of shadow and light is what gives faces much of their interest.

The portrait now lacked only its third and last element: color.

THE NEXT MORNING, when I settled into my sitter's chair, I said, "So this morning is all about color?"

"This morning is all about paint," Tom said. "It's where the brushstrokes really show. I've got the 'where' figured out—what the forms are like. I know the structure of the head. I know where I'm going. Now the important thing for me is the paint itself. I have to put this paint on, brushstroke by brushstroke. Nobody knows, looking at the finished picture, how much time I've taken between brushstrokes. When you look at a Sargent it just knocks you over with its spontaneity—the bravura brushstrokes. So you assume it was painted quickly—a la prima, as artists say. What you don't realize is that there may have been a lot of time between brushstrokes, in which he was just thinking about paint. He wanted the paint to be beautiful, just as a cabinetmaker wants the texture of his wood to be beautiful. Spontaneity itself has no value. Sargent wanted many sittings because he used them to practice—he wanted every stroke to appear right on.

"I try to apply the paint in such a way that I'm making an interesting physical object. The thing you fight against all the time is to not have the painting die on you—not to make the paint dull, or to lose the transparency or the vitality. What no painter ever wants to hear is: 'I like it very much, but it really doesn't have Jean's sparkle.' Remember Sargent's famous definition: A portrait is a painting with something a little wrong with the mouth."

The odds against catching Jean's sparkle seemed to me to be high; rare is the family member who doesn't find something not quite right in a family portrait. I asked Tom what it was like to embark on such a skittish marriage every time a new patron signs him up.

"I have to please myself," he said. "That's what I must do. But my job is

THOMAS S. BUECHNER

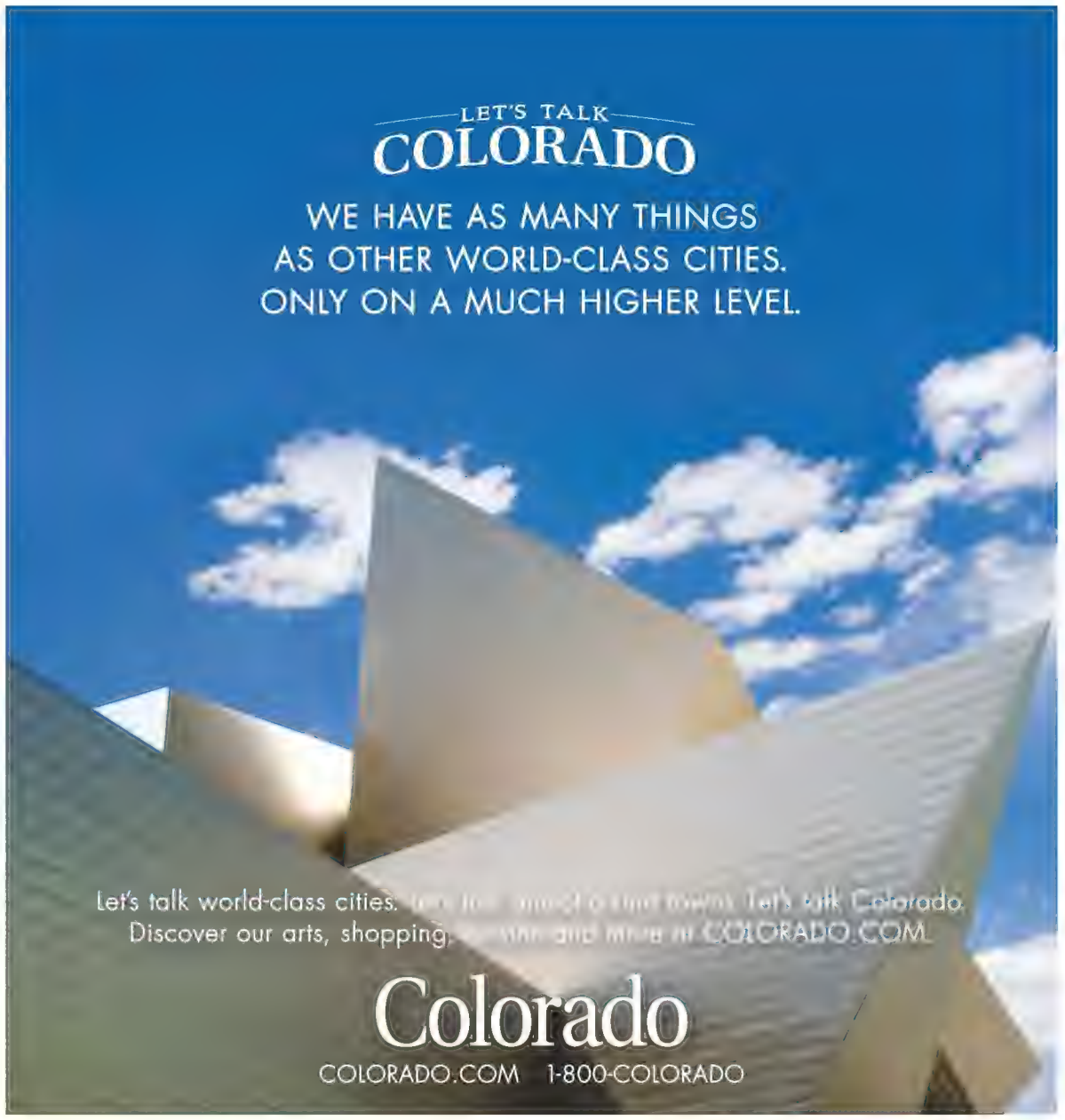
to please the client. Clients rarely know what they want, but they often know what they don't want. Wives also have very possessive feelings—here's a guy fooling around with my husband's face. But I always make it clear that the painting is for just one person—the client. If it's a portrait of a child, the child's mother can be the client. Mothers know more about how their children look than you do. They'll say, 'I think George's cheeks are a little fuller than you have them,' or, if I've changed the clothing for aesthetic reasons, 'He never wears a shirt like that.'

"When a CEO—or anyone else—comes to me to be painted, I'm looking for an idea. This assumes that I've met him; maybe we've had a meal. We chat. I ask questions, see what his interests are, how he reacts, laughs, makes a point. Just who is this person? I study his face. I'm very conscious of his bearing, how he holds himself. Is he old and tired? Is he alive? Is he intellectually curious about the world? One banker who was retiring had a strong idea about the kind of person he thought he was and wanted to be: without a jacket, a hands-on guy. When someone wants to be like something, it tells you a lot about them. I could make an image of you that people would say, 'He must be a very funny guy,' or 'He must be a pessimist.' "

"Is it necessary for a portrait artist to like the people he paints?" I asked.

"I've done very few people I didn't like," Tom said. "I think that gives me an edge because your attitude is what you really paint. Some wonderful things happen with portrait subjects. They're out of their depth—they're in the hands of someone else. You really don't want to get arrogant with your surgeon.

"There was one CEO I didn't like. He talked only about himself and his achievements, instead of having a conversation with me. When he saw the finished portrait he said, 'You don't like me, do you?' I said, 'I'm sorry you said that. There are many other painters I'd be glad to put you in touch with—the best.' But when he brought his wife to



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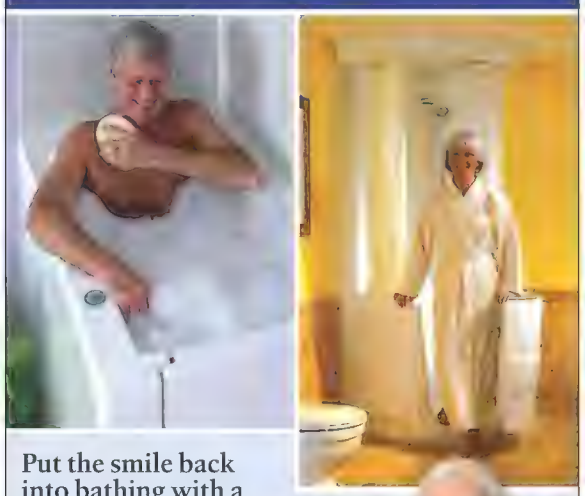

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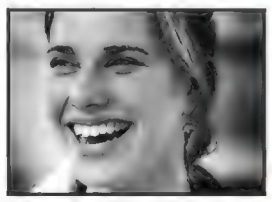

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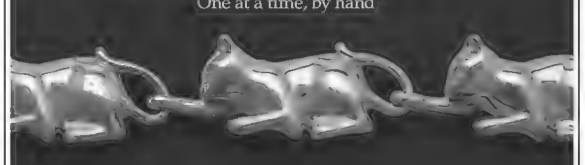

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see the portrait she said, 'You should look so good.'

"Some men refuse to be painted. But most of them are interested. They regard it as a certain kind of mystery. How did it happen? It's a two-person transaction. Painting people is what I most like to do. In one person we see all people, including ourselves."

One question Tom often asks executives and other leaders, he said, is: "Do you want to be painted as someone who has a question, or as someone who has an answer?" It's an elegant question, and I began to wrestle with it. The CEOs, I guessed, were answer

Then light: "With white and Naples yellow, a color sort of like cream, I show where and how it falls," the artist says.

types, and I didn't want to be associated with them: arrogant know-it-alls. I wanted to be a man who has a question. Much of what I know I've learned by asking a million questions.

And yet . . . as I watched Tom studying my face and making judgments of his own, I heard a voice saying, "Not so fast." For much of my working life I've been in a position of authority, starting in my mid-20s when I was an editor at the *New York Herald Tribune*. Later I edited several magazines and was master of Branford College at Yale. Since then I've kept busy writing books and teaching courses

THOMAS S. BUECHNER

that are taken by people looking for answers on how to write. In none of those undertakings do I remember having an onset of shyness or doubt and thinking, "I can't do that." Obviously, I was also a man who liked to be in charge, and I told Tom he would just have to contend with that ambiguity. I don't think it came as news to him that the human face is a shifting sea of contradictions.

"Actually," he said, "that question is mostly a ruse to get people to think—to start using the muscles in their face. Your face right now is full of all sorts of ripples as you think about the question."

The morning ambled along, Tom applying brushstrokes with Sargent-like confidence. At one point he asked me to take a look at the color he had added. To my dismay, the face was quite pink, more Hallmark than Buechner, and the strength had leaked out of it. I told Tom I didn't like it. It was the only criticism I made of the portrait-in-progress.

"I thought you looked pale," he said. Whether this was an artistic or a medical opinion I didn't ask. Tom assured me he could correct it; it was just a glaze. "When my sitters make a complaint I always tell them, 'Don't worry, it's only paint.'"

When I next saw the painting, at the end of the morning, the colors were true.

The portrait was now 95 percent done; Tom would do some final tinkering after I left, mostly on the clothes. "Painters leave out a lot of stuff," he said. "I could put the herringbone in your jacket and people would say, 'You can see the herringbone.' But that's not what I'm about and it's not what you're about."

We had arrived at the dreaded moment when the sitter is asked to look at the portrait and the painter says, "What do you think?" Tom had put ten hours of his life into trying to sum up my life as he saw it summed up in my face. What if I had to tell him he had botched the job? ("I can't quite put my finger on it; there's something about the eyes.") I went over and looked at the man looking out at me from the

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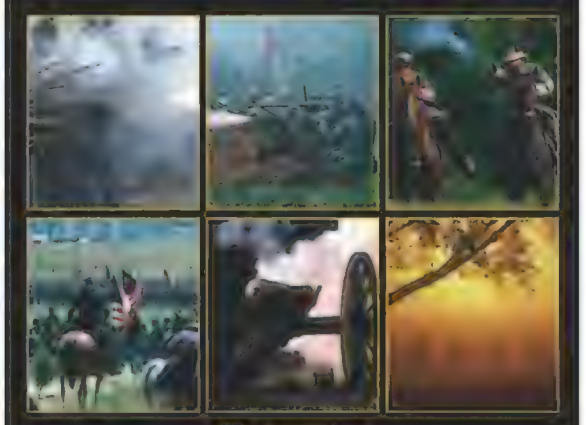

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easel. He was just what I thought and hoped I looked like. The brushstrokes of heavy paint had brought animation to the eyes and humor to the mouth. But it was only a suggestion of humor; the person in the portrait was ultimately a serious person. He looked more imposing than I felt.

Because it wasn't a full-length portrait, Tom hadn't been able to paint my signature sneakers. But he did have the next-best thing: my white button-down Oxford shirt and collar. That collar is one of the quirky affectations of the WASP oligarchy. It's not designed to lie flat and to look starched, but, instead, to have a bulge and to look unstarched. By buying that shirt the wearer also declares himself to be unstarched. The shirt in Tom's portrait is a perfect replication of the Brooks Brothers bulge and is the strongest identifying mark in his composition, along with the tie, which, I saw, was very slightly askew. Those two objects of clothing—shirt and tie—say as much about me as my sneakers.

Then color: "I know where I'm going," Buechner says. "Now the important thing for me is the paint itself."

"That tie is like an arrow," Tom said. "It's like a spear. A spear points. What does it point to? It points to the most important thing in the picture: you. There's a toughness and strength in

THOMAS S. BUECHNER

you. But there's also a softness—a sensitivity to things; it's not all black and white. So I wanted to emphasize the curve in the lapel. A straight line is masculine, a curve is feminine; it's deeply psychological. Your head is tilted slightly, so it doesn't have that in-your-face abruptness. It acknowledges that you're human."

That afternoon I caught the bus back to New York, riding past fields and farms that I felt I knew from Tom's many arresting landscapes. I was contented; if painting a portrait is a two-person transaction, Tom and I had spent the two days well. He had given

Done—with glasses erased from jacket pocket, in order to preserve "the impact of simply looking into a man's face."

me a gift of myself, one that would outlive me. That made me feel a little less bad about being dead.

A few weeks later the finished portrait was shipped to our apartment in New York. Everyone who saw it—wife, children, family, friends—agreed that Tom had really "gotten" me, and I called to tell him how good they all thought it was.

"Well, if you ever want anything changed," he said, "just let me know and I'll come and fix it. It's only paint."

WILLIAM ZINSSER *is the author of 17 books, including* On Writing Well.

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**Source: "Lighting the Way to Energy Savings"; 1999

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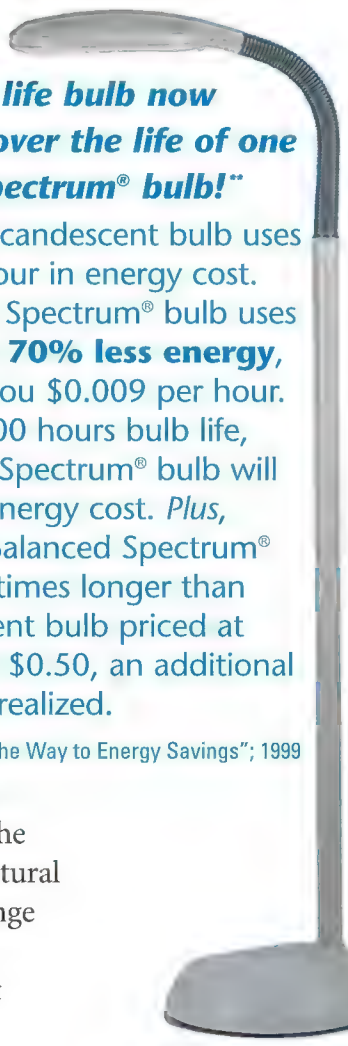

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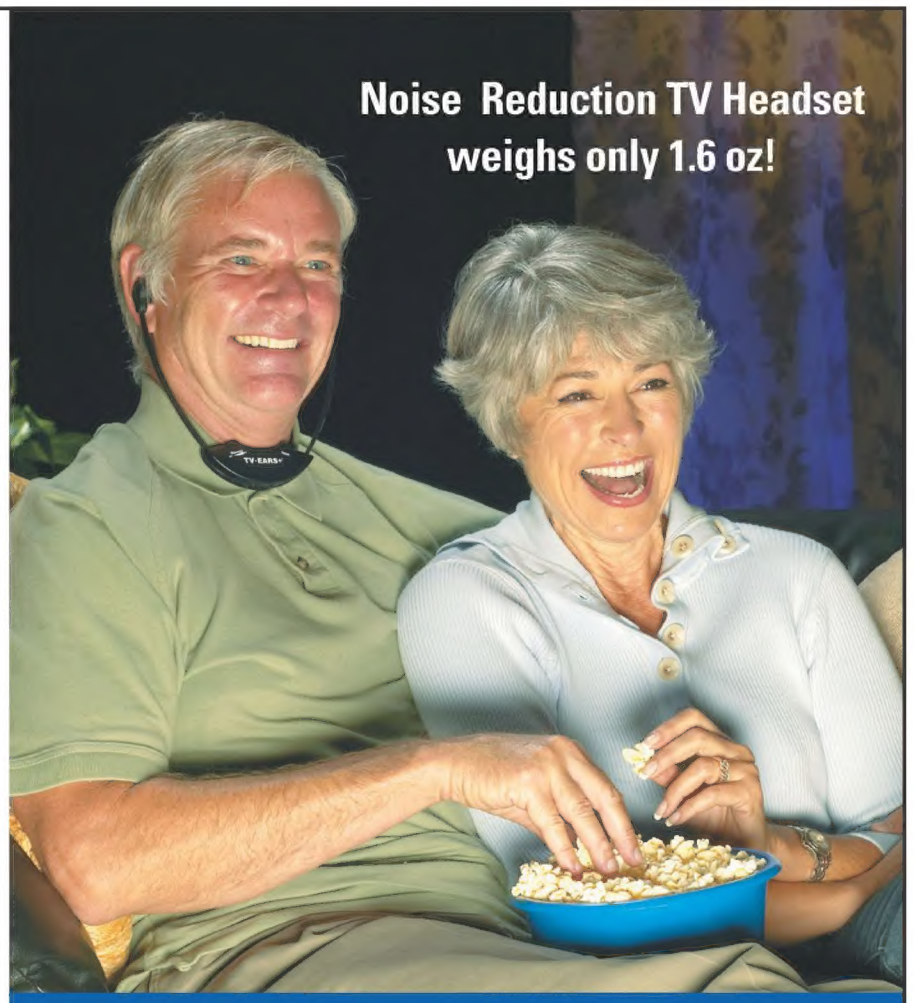

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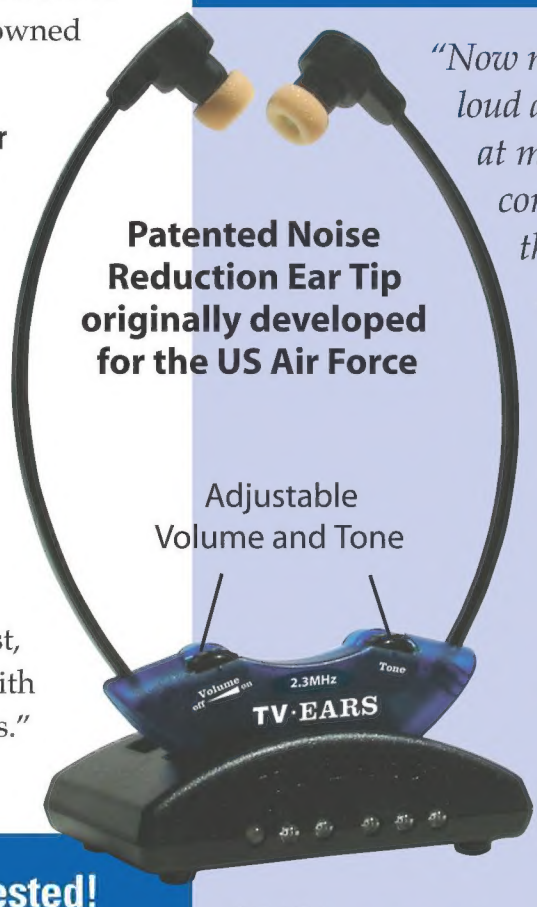

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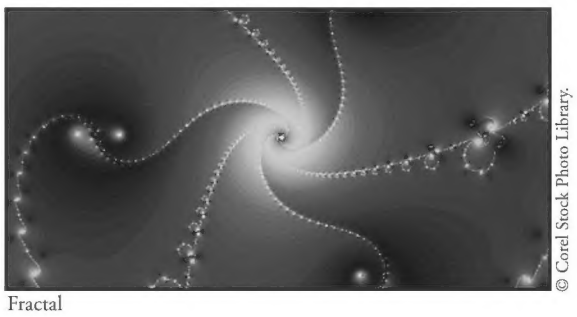

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Good for the Goose

The Untouchables Meets the Food Network **BY MICHAEL GEE**

Today Chicago has taken a lead in humane food production. The city council voted this week to ban the production and sale of foie gras, the first U.S. city to do so.

—The Associated Press, *April 28, 2006*

A FOOD NETWORK SPECIAL PRESENTATION

CUE Untouchables *theme: Dum, da-dum, DUM, DUM . . .*

Announcer: Welcome to "The Untasteables," with Bobby Flay as Eliot Niçoise, Emeril Lagasse as Alphonse Capon and Rachael Ray as his moll, Rachael. Tonight's episode: "Liver Let Die."

Voice of Walter Winchell: On a spring day in 2007, a small group of worried men met in a dark but tastefully decorated warehouse on Chicago's South Side.

PAN to a large table surrounded by HENCHMEN wearing toques and aprons, dark blue with wide white pinstripes. Some brandish pastry guns. At the head of the table sits CAPON.

Henchman: Alphonse, we got trouble. Niçoise and the Untasteables just intercepted a truckload of live Camembert at one of our Rush Street joints and dumped it in the doorway in front of the maitre d'. Place stinks like the Cubs bullpen, and we're out 50 grand. The Iron Chef will be knifing into our territory any day now. And the city ain't just talkin' foie gras anymore. The city council's got a bill mandating nothin' but Illinois champagnes.

HENCHMEN shudder.

Capon: Don't worry, boys. We're gonna kick it up a notch on Niçoise and his Ivy League nutritionists. Chicago ain't ready for food police. Rachael!

RACHAEL flounces into the room. Her apron is made of feathers and spangles.

Rachael: Yeah, 'Phonsy, honey?

Capon: I got a job for you. Tonight Strasbourg Benny's running in the biggest load of foie gras this town's ever seen. I want you to go see Niçoise and tell him it's going to the North Side instead of here, see. Don't worry if they lock you up for a couple days. When the mayor's eating my stuff, he'll spring you.

CUT to an antiseptically clean model kitchen. ELIOT NIÇOISE sits at his desk, writing recipes. THE UNTASTEABLES, in lab coats, clean their spatulas. On the counter, a newspaper is folded open to the headline, "Geese Name Niçoise Man of Year."

RACHAEL flounces in, sobbing.

Rachael: Oh, Mr. Niçoise, I just had to come. I want to go straight. I've seen what this life has done to other girls. First you get high cholesterol, then you're doing weight-loss commercials with Kirstie Alley.

Niçoise: What can I do? The government doesn't need another short-order chef, not even at the Pentagon.

Rachael: Alphonse Capon is bringing in a big shipment of foie gras tonight—to the North Side. You've got to stop him, and you've got to hurry. They'll be there in 30 minutes!

Niçoise: Where on the North Side?

Rachael: Um, Lake Forest?

Niçoise *(sneers)*: Yeah, right—foie gras on white bread for the suburbs. Capon should've known better. Take her away, Rico. Let's see if she can feed Cook County Jail on $40 a day. C'mon, boys—Capon's place on the South Side!

CUT to the loading dock at the warehouse, where HENCHMEN are unloading tins of foie gras stamped "Extra cruelty for extra flavor." A SANDWICH TRUCK crashes through the loading door.

RICHARD THOMPSON

Henchmen: The Untasteables!

Niçoise: It's all over, Al. Drop that wine list and put up your hands!

A WOMAN pushes a baguette-laden shopping cart down the sidewalk, unwittingly coming between CAPON and NIÇOISE. CAPON pulls out a basting tool and fires. He misses NIÇOISE but hits a tanker truck marked HERSHEY'S. A jet of brown goo swallows CAPON and HENCHMEN.

Henchmen: AIEE!

(In a French accent.)

Niçoise *(standing over the mess)*: Ha! Capon's last dish—St. Valentine's Day Massacre by Chocolate.

CUE Untouchables *theme and FADE to black.*